



March 13, 2009

Ms. Agnes Farres
California Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Subject: Request for Closure and Transmittal of the
Former Fuel Distribution System ("FDS") Area A Phase II Field Sampling Report
and Phase II Closure Report
Presidio of San Francisco - San Francisco, California

Dear Ms. Farres:

This letter requests regulatory closure of the remaining 4 Area A Phase II Fuel Distribution System (FDS) segments within the Presidio in San Francisco, California. The enclosed *Former Fuel Distribution System ("FDS") Area A Phase II Field Sampling Report and Phase II Closure Report, Presidio of San Francisco, California*, prepared by Erler & Kalinowski, Inc. (EKI) for the Presidio Trust (Trust), documents site sampling and data review activities to support the request for closure.

Based on the data included in the attached report, the Trust is requesting site closure from the Water Board and concurrence that no further action is required at the 4 Area A FDS Phase II segments identified herein. Please call Jen Yata at (415) 561-4272 or me at (415)561-4259 if you have any questions or require additional information.

Sincerely,

Eileen Fanelli

Eileen Fanelli
Environmental Remediation Program Manager

Enclosure

cc: Robert Boggs, DTSC (electronic copy only)
Brian Ullensvang, NPS
Doug Kern, RAB
Mark Youngkin, RAB (without enclosure)
Michelle King, EKI (without enclosure)



Consulting Engineers and Scientists

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13 March 2009

Ms. Jennifer Yata
Presidio Trust
P.O. Box 29052
San Francisco, California 94129-0052

Subject: Fuel Distribution System Area A Phase II Field Sampling Report and
Phase II Closure Report
Presidio of San Francisco, California
(EKI A70004.16)

Dear Ms. Yata:

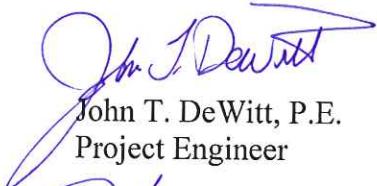
Erler & Kalinowski, Inc. ("EKI") is pleased to present to the Presidio Trust ("Trust") the attached report, entitled *Former Fuel Distribution System Area A Phase II Field Sampling Report and Phase II Closure Report* and dated March 2009 ("FDS Field Sampling Report"), which was prepared in accordance with our contract PT-2006-034.

The purpose of the FDS Field Sampling Report is to evaluate the results of soil sampling and chemical analysis from four Phase II FDS Sections located in Area A of the Presidio, and to present the rationale for requesting closure for all four FDS Sections that have met closure criteria on the basis of these results.

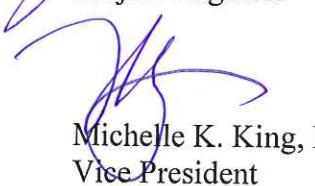
Please call if you have any questions.

Very truly yours,

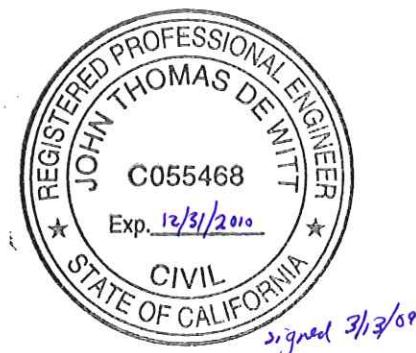
ERLER & KALINOWSKI, INC.



John T. DeWitt, P.E.
Project Engineer



Michelle K. King, Ph.D.
Vice President



**Former Fuel Distribution
System (“FDS”) Area A
Phase II
Field Sampling Report and
Phase II Closure Report**

**Presidio of San Francisco
California**

March 2009

Prepared By:

**Erler & Kalinowski, Inc.
Burlingame, California**

EKI A70004.16

**FUEL DISTRIBUTION SYSTEM AREA A PHASE II FIELD SAMPLING
REPORT AND PHASE II CLOSURE REPORT**

Presidio of San Francisco, California

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FUEL DISTRIBUTION SYSTEM AREA A PHASE II FIELD SAMPLING REPORT AND PHASE II CLOSURE REPORT

Presidio of San Francisco, California

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**FUEL DISTRIBUTION SYSTEM FIELD SAMPLING REPORT AND PHASE II
AREA A CLOSURE REPORT**

Presidio of San Francisco, California

LIST OF ACRONYMNS/ABBREVIATIONS

#	Number
> CL	Above Cleanup Levels
< CL	Below Cleanup Levels
<5 CF	Soil cleanup levels for the protection of water quality at Crissy Field, < 5 feet above the highest groundwater (Water Board Order R2-2003-0080, Table 5)
>5 GW	Soil cleanup levels for the protection of water quality at depths > 5 feet above the highest groundwater (Water Board Order R2-2003-0080, Tables 3, 4, 5)
<5 MCL	Soil cleanup levels for the protection of water quality at drinking water standards, < 5 feet above the highest groundwater (Water Board Order R2-2003-0080, Table 4)
Army	U.S. Army Corps of Engineers
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
BBL	Blasland, Bouck & Lee, Inc.
bgs	below ground surface
CAP	Corrective Action Plan
Commissary/PX	Commissary / Post-Exchange
CSS	Confirmation Soil Sample
CF	Crissy Field, or Soil cleanup level for Crissy Field (Water Board Order R2-2003-0080, Table 5)
CL	Cleanup Levels
cy	cubic yards
DOT	Department of Transportation

**FUEL DISTRIBUTION SYSTEM FIELD SAMPLING REPORT AND PHASE II
AREA A CLOSURE REPORT**

Presidio of San Francisco, California

LIST OF ACRONYMNS/ABBREVIATIONS

DTSC	Department of Toxic Substances Control
Eco-FW	Point of compliance concentrations for soil and water for gasoline and BTEX in surface water and sediments of the proposed freshwater stream (Water Board Order R2-2003-0080, Table 7)
Eco-SW	Point-of-compliance concentrations in soil and water for petroleum hydrocarbons, BTEX, and MTBE for the saltwater protection zone (Water Board Order R2-2003-0080, Table 6)
Eco-T	Soil cleanup levels for the protection of ecologic receptors, terrestrial receptors (Water Board Order R2-2003-0080, Table 2)
EKI	Erler & Kalinowski, Inc.
FDS	Fuel Distribution System
FSP	Field Sampling Plan
ft	feet
GGBHTD	Golden Gate Bridge, Highway, and Transportation District
GGNRA	Golden Gate National Recreational Area
GRC	Geo/Resources Consultants, Inc.
HH-Rec	Soil cleanup levels for the protection of human health, recreational cleanup levels (Water Board Order R2-2003-0080, Table 1)
HH-Res	Soil cleanup levels for the protection of human health, residential cleanup levels (Water Board Order R2-2003-0080, Table 1)
IT	International Technology Corporation
Level I	Level I Decision Criteria
Level II	Level II Decision Criteria
Level III	Level III Decision Criteria

**FUEL DISTRIBUTION SYSTEM FIELD SAMPLING REPORT AND PHASE II
AREA A CLOSURE REPORT**

Presidio of San Francisco, California

LIST OF ACRONYMNS/ABBREVIATIONS

ln ft	linear feet
LTTD	Low-Temperature Thermal Desorption
Mini-CAP	Miniature Corrective Action Plan
mg/kg	milligrams per kilogram
MW	Montgomery Watson, Inc.
MS/MSD	Matrix Spike/ Matrix Spike Duplicate
NA	Not Applicable
NFA	No Further Action
NPS	National Park Service
PAHs	Polycyclic Aromatic Hydrocarbons
QAPP	Quality Assurance Project Plan
RAB	Restoration Advisory Board
RAP	Remedial Action Plan
SOP	Standard Operating Procedure
SS	Soil Sample
TBD	To Be Determined
TPHd	Total Petroleum Hydrocarbons as diesel
TPHmo	Total Petroleum Hydrocarbons as motor oil
TPHfo	Total Petroleum Hydrocarbons as fuel oil
USA	Underground Services Alert
Water Board	Regional Water Quality Control Board, San Francisco Bay Region

1.0 EXECUTIVE SUMMARY

Erler & Kalinowski, Inc. (“EKI”), on behalf of the Presidio Trust (“Trust”), has prepared this Field Investigation Report for soil sampling and chemical analysis at 11 sample locations along two former fuel distribution system (“FDS”) pipeline sections (BR9-1 and MT-2) in Area A of the Presidio. The 11 sample locations were selected by EKI based on data gaps identified during review of the FDS removal report prepared by International Technology Corporation (“IT”) on behalf of the U.S. Army Corps of Engineers (“Army”) (IT,1999).

The Commissary/PX Implementation Report (AMEC, 2008) documents excavation activities conducted by the Trust at areas within former FDS sections CF-4 and CF-12. Closure for these sections is also requested in this document.

Closure of 12 of the total of 16 Area A FDS sections was requested in the January 2006 FDS Phase I Closure Report, which was amended by a letter dated 3 October 2008. This report evaluates soil sample results from the remaining four Phase II FDS Sections located in Area A of the Presidio (BR9-1, CF-4, CF-12, and MT-2) for which the Trust is seeking closure.

Phase II investigation results for FDS segments in Area B are addressed in a separate report (EKI, 2009).

2.0 INTRODUCTION

Erler and Kalinowski, Inc. (“EKI”), on behalf of the Presidio Trust (“Trust”), has prepared this Field Sampling Report for soil sampling and chemical analysis from 11 locations along the former fuel distribution system (“FDS”) pipeline. FDS Section BR9-1 is located entirely with Area B, and Section MT-2 straddles the Area A/B line. The samples collected in FDS Section MT-2 were all within Area A; however, they are being reported here because the section straddles the Area A/B line.

These sample locations are along two FDS sections within or near Area A with data gaps identified by EKI based on a review of the FDS removal report prepared by International Technology Corporation (“IT”) on behalf of the U.S. Army Corps of Engineers (“Army”) (IT, 1999). FDS sections in Area B are addressed in a separate report (EKI, 2008).

This soil investigation was conducted in October 2007 in general accordance with EKI’s *Field Sampling Plan – Former Fuel Distribution System Closure Phases II and III, Presidio of San Francisco, California* (“FSP”) dated 27 April 2007. The scope of work was also conducted in accordance with the Presidio-wide Quality Assurance Project Plan (“QAPP”) (TTEMI, 2001). The FSP was approved by the Regional Water Quality Control Board, San Francisco Bay Region (“Water Board”) in a letter dated 18 July 2007. This report also includes a closure request for four FDS sections designated as the Area A Phase II closure sections. This report and closure request are prepared in accordance with Task C.12 of the Water Board Order R2-2003-0080 (“the Order”).

2.1 OVERVIEW

During the FDS removal program, the Army divided the FDS into 66 sections. The primary documentation of the removal activities and associated sampling for 60 FDS sections is presented in the three-volume report entitled *Fuel Distribution System Closure Report, Presidio of San Francisco, California*, prepared by IT and dated May 1999. Six additional sections were established by the Army to address sections of FDS pipeline that were historically removed by the Army (prior to the 1930s), with the results of soil investigation activities conducted in 1998 and presented in the report entitled *Additional Investigation of Fuel Distribution Systems* prepared by Montgomery Watson and dated August 1999. Guidelines for the FDS Removal Program were established under Water Board Order No. 96-070. Subsequently, this order was superseded by Water Board Order No. R2-2003-0080, which does not specifically address sampling requirements associated with FDS removals.

On 27 January 2006, the Trust submitted the Closure Certification Report for Phase I FDS sections to the Water Board, and amended by letter on 3 October 2008. This document identified 27 FDS sections (12 sections in Area A) where no additional investigative or remedial work was required (Trust, 2006). As a follow-up to the Trust’s Phase I Closure Certification Report, EKI conducted a critical review of the Army’s FDS removal program for the remaining 39 FDS sections in order to identify locations where

data gaps may exist such that criteria for Water Board closure certification are not met. Based on this critical review, the Trust developed decision logic in order to evaluate the Army FDS removal program and make recommendations to address data gaps found in FDS sections not yet submitted to the Water Board for closure. This data gap investigation report includes additional soil investigation activities at two of the four FDS sections in Area A.

Of the 39 FDS sections not submitted for Phase I closure, part or all of four sections (BR9-1, CF-4, CF-12, and MT-2) are located in Area A. Sections CF-4 and CF-12 are addressed in the Commissary/PX CAP. Closure for all of these Area A Sections is requested in this closure report.

2.2 DOCUMENT ORGANIZATION

Table 1 outlines the general decision criteria (Levels I, II, and III) used to evaluate the FDS sections based on the criteria identified in Water Board Order 96-070. Table 2 provides a detailed summary of the individual Area A FDS sections with documentation of historical information, comparisons to the Level I, II, and III decision criteria, identified data gaps, and rationale for additional sampling (if appropriate). Table 3 provides a sample analysis matrix for soil samples conducted in the implementation of the FSP and shown on Figures 2 and 3. Tables 4 and 5 summarize the laboratory analytical results. Table 6 summarizes all FDS Sections by closure group.

This document includes the following appendices:

- Appendix A presents the decision logic used in the FSP to evaluate data gaps and determine if additional sampling is appropriate;
- Appendix B discusses the field methods used to collect soil samples;
- Appendix C contains a CD with laboratory analytical reports for soil samples collected along the FDS lines in or near Area A;
- Appendix D contains the data validation report;
- Appendix E contains the surveyor's report;
- Appendix F contains relevant historical documents addressing data gaps at selected FDS Sections, including figures depicting the extent of remedial action performed at FDS Sections CF-4 and CF-12;
- Appendix G contains excerpts from the Army's FDS Removal Program Results for sections in this report (BR9-1, MT-2, CF-4, and CF-12), including text, tables, and figures; and,
- Appendix H contains borehole logs.

3.0 BACKGROUND

Circa 1900, the Army constructed the FDS network to supply fuel oil to residential and administrative buildings located throughout the Presidio. Fuel oil was brought to the Presidio by ship and pumped from the dock located in the Building 900's Area up to a large aboveground storage tank ("AST"), AST 1349, located in the west-central portion of the Presidio. From there, fuel oil was gravity-fed to individual buildings via the FDS pipeline network. The Army's FDS pipeline removal index map (Figure 1) shows the FDS lines and section names. The FDS pipelines ranged between 2 and 6 inches in diameter. Unnamed lateral pipelines ("laterals") extended off the main pipeline and fed approximately 300 USTs located within or near buildings heated by fuel oil. Additionally, gasoline and diesel were reported to be present in FDS pipelines located within the Crissy Field area, designated with the prefix "CF" (FDS Sections CF-1 to CF-3, CF-6 to CF-7 and CF-11). FDS sections CF-8 to CF-10 likely carried fuel oil.

The Army decommissioned the FDS from the early 1940's through the early 1960's but the piping remained in place. The FDS removal program was conducted from 1996 to 1999 under oversight by the Army under Water Board Order 96-070. Approximately 45,000 feet ("ft") of FDS pipeline were removed. Sections that could not be removed (due to the locations of buildings or other obstructions) were pressure tested and capped at both ends. The removal program included the removal of all accessible lengths of pipeline as well as confirmation soil sampling of the following (IT, 1999b):

- Stockpiled soil was generally to be sampled at a frequency of 50 cubic yards ("cy") per one 4-point composite soil sample for the FDS removal program as a whole, not for each individual FDS section;
- Along trenches where pipeline was removed, soil samples were to be collected from the bottom of the trench at a frequency of 100 linear feet ("lf") per sample and also at the ends of pipeline, at changes in direction, and at intersections with lateral pipeline per Water Board Order 96-070;
- In soil located along lengths of pipeline abandoned in place ("abandoned pipeline"), soil was to be sampled at a frequency of 50 lf per sample per Water Board Order 96-070 as well as at both ends of abandoned pipeline; and
- At sidewalls and bottoms of overexcavations conducted as part of the pipeline removal, soil samples were to be collected at a frequency of two samples per 15 lf, with one sample to be collected on either side of the excavation, or at an equivalent frequency of 7.5 lf per sample.

Confirmation soil samples ("CSS") collected by the Army were generally analyzed on-site using immunoassay procedures, with ten percent of the soil samples sent to a fixed laboratory for confirmation of analytical results. In cases where Army sample results may have potentially been above applicable cleanup levels, the area in the vicinity of the sample was identified as having a data gap. The Army's results for soil samples potentially above applicable cleanup criteria are posted on the FDS section figures. In cases where the Army sample results were confirmed by the field investigation results,

the Army sample results are in bold. Where the results of the current field investigation suggest that the soil impacts are not above applicable cleanup levels, the Army results remain bolded but orange dots are not present.

As part of a remedial measure for petroleum sites presented in Water Board Order 96-070, petroleum-affected soil found to be above discharge requirements was either disposed offsite or treated using Low-Temperature Thermal Desorption (“LTTD”) by heating soil to between 600 and 700 degrees Fahrenheit to volatilize organics (i.e., petroleum hydrocarbons, polycyclic aromatic hydrocarbons (“PAHs”), and benzene, toluene, ethylbenzene, and xylenes (“BTEX”)). Stockpiled soil or batches of LTTD-treated soil with sample results below discharge requirements were used to backfill FDS excavations to approximately 18 inches below ground surface (“bgs”), with imported topsoil used to backfill the top 18 inches of trenches or overexcavations. Batches of LTTD-treated soil placed along FDS sections were identified by their postpile number (e.g., POST 37) or their range number, which was a batch of LTTD soil that included several postpiles (e.g., RANGE 17 was composed of POST 059, 082, and 083). Post or range numbers for batches of LTTD-treated soil used to backfill FDS trenches or overexcavations are indicated on the profiles included in the Army’s FDS removal figures (IT, 1999) (Appendix H). LTTD-treated soil has a distinct dark brown to blackish color that makes it readily distinguishable from native soil and import or stockpiled soil used to backfill trenches subsequent to FDS pipeline removal.

Based on their review of the FDS removal program, in 1999 the Army identified 26 sites along the FDS pipeline that needed additional remedial work and 40 FDS sections where no further action (“NFA”) was required. The Army’s recommendations for remedial work or NFA at the individual FDS sections are identified in Appendix A (Table 2 of the FDS FSP).

4.0 DATA GAP ANALYSIS

In preparing the FSP, the Trust conducted a review of available FDS removal data and identified potential data gaps. Using the decision logic presented in Table 1, the results for the various parameters for each FDS section were evaluated. Appendix A contains the summary tables used as a basis for the sampling in FSP. A detailed description of the decision logic was presented in the FSP. Tables 2 and 3 in the FSP summarize the data gap analysis.

5.0 FIELD ACTIVITIES

5.1 PRELIMINARY FIELD ACTIVITIES

A pre-field work site walk was conducted by the Trust and NPS on 10 April 2007 to confirm the planned sampling locations, mark agreed-upon sample locations for Underground Service Alert (“USA”) and Trust locating services, and discuss potential issues associated with utilities, traffic, access, tenants, native plants, special habitats, and historic structures.

Similar to other Trust projects, activities associated with utility clearance (including utility locating), permitting or other regulatory requirements, and coordinating for the Presidio-specific NPS and Trust reviews and compliance activities (e.g., N² and 5X) were performed and coordinated by the Trust. EKI notified USA of planned sampling events after sample locations had been marked in the field.

5.2 SAMPLE COLLECTION PROCEDURES

FDS sections where soil sampling was conducted are shown in green or blue on Figure 1. EKI collected soil samples from 11 sample locations along FDS sections BR9-1 and MT-2, as shown on Figures 2 and 3.

5.2.1 Sample Collection Procedures

Samples were collected in accordance with the field methods and procedures outlined in Appendix B and as specified in Standard Operating Procedures (“SOP”) 001, SOP 009, SOP 013, SOP 014, and SOP 015 of the QAPP. The soil samples were collected using a hand auger. The depths and corresponding laboratory analyses for soil samples are summarized in Table 3. Deviations from the FSP are discussed in Section 6.1.3.

5.2.2 Field Quality Control Samples

Field duplicates for soil samples were collected as part of the overall FDS investigation in accordance with the QAPP. No field duplicates were collected from Sections BR9-1 or MT-2.

5.2.3 Sample Naming Convention

FDS section names and lengths were assigned by the Army during design of the removal process. “MT” stands for main trunk, “BR” stands for branch line and “CF” stands for Crissy Field.

The sample naming convention used during this field investigation is consistent with the FDS section names assigned by the Army during FDS removal. Sample names start with the FDS Section name (e.g. MT-2 for FDS Section MT-2). Following the FDS Section name, “SB” is indicated to designate a soil boring location. Multiple samples could be collected from a single soil boring sample location. Samples were identified with feet below ground surface (“ft bgs”) in sample name. In keeping with the QAPP, a soil sample from FDS Section BR9-1 at 5.5 ft bgs was designated as BR9-1SB01(5.5).

5.2.4 Investigation Derived Wastes

Solid wastes generated during the investigations along the former FDS pipeline were characterized as non-hazardous and were disposed in accordance with applicable regulations by Clearwater Environmental, Inc. on 14 December 2007. Liquid wastes generated during the investigation were placed into the Trust’s water storage tanks, and upon characterization, disposed by the Trust under their wastewater discharge permit.

5.2.5 Analytical Laboratories

Discrete soil samples for chemical analysis were selectively analyzed for one or more of the following analytes using the following methods:

- TPH as diesel (“TPHd”) and TPH as fuel oil (“TPHfo”)¹ with silica gel cleanup by EPA Method 8015M; and
- PAHs by EPA Method 8270SIM.

All samples were analyzed by Curtis & Tompkins, LTD. of Berkeley, California, a state-certified analytical laboratory.

5.2.6 Surveying

The final locations and elevations of soil boreholes were surveyed by PLS Surveys, Inc. of Oakland, California, a State of California-licensed land surveyor. The survey included the ground surface elevation and the horizontal coordinates of each sampling location. The survey data are included in Appendix E.

¹ The reported carbon ranges for TPHd and TPHfo are C12 to C24 and C24 to C36, respectively.

6.0 RESULTS OF FIELD SAMPLING

Observations and analytical results of sampling activities along FDS Sections included in the FDS field investigation are discussed below. The results of historical investigations are discussed in conjunction with recent findings, as appropriate.

6.1 SOIL SAMPLING

Soil sampling was conducted in general accordance with the FSP. Table 3 presents a matrix of the samples collected and analyzed. Tables 4 and 5 present the results of the sampling events. Figures 2 and 3 present the sample locations and results of this soil investigation as well as historical data which were included in the basis for the additional sampling. Borehole logs are presented as Appendix H.

6.1.1 Data Gaps Addressed

Data gaps identified in the FSP were addressed along each FDS Section as summarized in the results column of Table 2. Additional historical documentation of field investigation results by others that address data gaps in the Army FDS Removal program are included as Appendix F.

6.1.2 Observations and Analytical Results

Results and observations of the soil sample collection for this investigation are summarized in Table 2. Analytical results are presented in Tables 4 and 5. The applicable cleanup levels for each FDS Section are also shown in Tables 4 and 5. A CD with laboratory analytical reports for soil samples collected along the FDS lines during this investigation is included as Appendix C.

6.1.3 Deviations from the Sampling Plan

The notes on Table 3 describe most of the deviations from the FSP; further detail is provided in the results column of Table 2.

Sampling depths were adjusted based on encountered field conditions. At locations at FDS Section MT-2, the presence of shallow bedrock precluded the collection of the second, deeper sample specified in the FSP.

Selected soil samples were collected but not analyzed from FDS Section MT-2 at location MT2-SB03. Deeper samples were not analyzed because no hydrocarbon staining or odor was detected in shallower soil samples.

6.2 RESULTS OF DATA VALIDATION

Data validation of Level III and Level IV laboratory data packages was performed by DataVal, Inc., of Novato, California, in accordance with the project-specific guidelines outlined in the QAPP. The data were reviewed for holding times, surrogate recoveries, laboratory blanks, MS/MSD, GC/MS tunes, initial calibrations, continuing calibration

verification standards, internal standards, field QC samples, and compound identification and quantitation. Overall, DataVal concluded that the data were usable, with the limitations as indicated by data qualifiers. DataVal's data validation summary report is included in Appendix D.

7.0 CLOSURE REQUEST

7.1 PHASE I CLOSURE REQUEST

As stated above, 12 FDS sections in Area A were included in the Phase I closure request submitted to the Water Board in 2006, as amended in October 2008.

7.2 PHASE II CLOSURE REQUEST

The remaining four FDS sections in Area A were found to meet closure criteria as part of Phase II. These sites and the rationale for the closure are identified in Table 2.

FDS Sections BR9-1 and MT-2 were sampled, but no concentrations of TPH or PAHs were found above cleanup levels. Therefore, closure is requested for FDS Section BR9-1. Based on historical sampling results for FDS Section MT-2, closure is requested for FDS Section MT-2; however a land use notification is recommended only in the vicinity of Hoffman Street, in Area B, as shown on Figure 3. A land use notification is appropriate for the Hoffman Street portion of Section MT-2, given that average depth to groundwater ranges from approximately 14 feet to approximately 34 feet in the area, resulting in a low risk for groundwater impacts. Based on the Trust's remedial actions at the locations of FDS Sections CF-4 and CF-12, as documented in the Commissary/PX Implementation Report, closure at FDS Sections CF-4 and CF-12 is requested. The results for these FDS Sections are discussed in Table 2.

8.0 REFERENCES

- AMEC Geomatrix, Inc., 2008. *Corrective Action Plan Implementation and Closure Report, Commissary/PX Area*. November.
- Curtis and Tompkins, Ltd., 2004. *Laboratory Analytical Report Number 173495 (soil samples 951SS100[2.5] and 951SS101[1.3])*. August.
- Erler & Kalinowski, Inc. (“EKI”), 2007. *Field Sampling Plan – Former Fuel Distribution System (“FDS”) Closure Phases II and III, Presidio of San Francisco, California*. April.
- EKI, 2009. *Draft– Former Fuel Distribution System (“FDS”) Phases II and III, Field Sampling Report and Phase II Area B Closure Report, Presidio of San Francisco, California*. February.
- Geo/Resource Consultants, Inc. ("GRC"), 2003. *Summary of Additional Investigations Mini-CAP Sites, Presidio of San Francisco, California*. February.
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- Presidio Trust, 2008. *Addendum to the Fuel Distribution System, FDS Closure Certification Report – Phase I. Presidio of San Francisco, California; Request for No Further Action*. October.
- Tetra Tech, 2001. *Presidio-Wide Quality Assurance Project Plan, Sampling and Analysis Plan, Presidio of San Francisco, San Francisco, California*. April.
- Treadwell & Rollo, Inc. (“T&R”), 2005. *Final Corrective Action Plan, Commissary/PX Study Area, Presidio of San Francisco, California*. December.
- T&R, 2008. *Semi-Annual Groundwater Monitoring Report, First and Second Quarters 2008, Presidio-Wide Quarterly Monitoring Program, Presidio of San Francisco (Volumes I and II)*. October.

Table 1
General Decision Criteria for Determination of Additional Work
to be Conducted at Individual Fuel Distribution System Sections

Presidio of San Francisco, California

Level I Decision Criteria

If:

- * Chemical concentrations in confirmation soil samples are above applicable cleanup levels (i.e., TPH, PAHs, or BTEX),^(a)
- * Chemical concentrations in stockpile soil samples are above applicable cleanup levels for TPH, PAHs, or for BTEX and such stockpiled soil was used as backfill; and/or
- * Chemical concentrations in LTTD treated soil are potentially above applicable cleanup levels and such LTTD-treated soil was used to backfill trenches or excavations,

Then:

- * Collect soil samples or confirmation soil samples to assess horizontal and vertical extent of affected soil.

Else:

- * Go to Level II Criteria.

Level II Decision Criteria^(b)

If:

- * Removed pipeline confirmation soil sampling frequency was greater than 100 lf/sample;
- * Abandoned pipeline sampling frequency was greater than 50 lf/sample;
- * Overexcavation confirmation soil sampling frequency was greater than 7.5 lf/sample;
- * Confirmation soil samples were not collected at each overexcavation;
- * Stockpile soil sampling frequency was greater than 50 cy/sample where soil was used as backfill^(c);
- * Abandoned lengths of pipe greater than 20 lf were not pressure tested; and/or
- * Abandoned piping failed pressure testing criterion.

Then:

- * Collect confirmation soil samples as appropriate to address data gaps. The need for sampling is often dictated by the presence of visually contaminated soil or the performance of overexcavation along the FDS section.

Else:

- * Go to Level III Criteria.

If:

- * Potential groundwater impacts may exist (e.g., high chemical concentrations at depths greater than 10 ft bgs where groundwater may be relatively shallow).

Then:

- * Evaluate chemical concentrations as a function of depth at sample location where petroleum hydrocarbons could potentially impact groundwater.

Table 1
General Decision Criteria for Determination of Additional Work
to be Conducted at Individual Fuel Distribution System Sections

Presidio of San Francisco, California

Abbreviations:

BTEX - Benzene, toluene, ethylbenzene, xylenes

cy - cubic yards

FDS - Fuel Distribution System

ft bgs - feet below ground surface

ft - feet

lf - linear feet

LTTD - Low-Temperature Thermal Desorption

PAHs - Polycyclic Aromatic Hydrocarbons

RWQCB - Regional Water Quality Control Board

TPH - Total Petroleum Hydrocarbons

TPHd - Total Petroleum Hydrocarbons quantified as diesel

TPHfo - Total Petroleum Hydrocarbons quantified as fuel oil

Notes:

(a) Applicable cleanup levels used by the Army were obtained from former RWQCB Order 96-070. The same cleanup levels were incorporated into the current Order for the Presidio, RWQCB Order R2-2003-0080. The current Order also includes cleanup levels for petroleum hydrocarbons and related constituents for sites within the saltwater and freshwater ecological protection zones.

Application of the freshwater ecological protection zone values is described in the document prepared by BBL, entitled "Draft Development of Freshwater TPHd and TPHfo Point of Compliance Concentrations, Presidio of San Francisco, California" and dated 15 July 2005.

(b) Level II Decision Criteria originate from the testing and sampling requirements included in former RWQCB Order 96-070.

(c) Stockpiled soil potentially used as backfill was overburden soil from the removal of FDS piping. If chemical concentrations in stockpiled soil were greater than applicable cleanup levels, stockpiled soil was supposed to be either treated at the LTTD unit or disposed off-site.

Table 2
Evaluation of Data Gaps in the Fuel Distribution System Removal Program
 Presidio of San Francisco, California

FDS Closure Phase Number	FDS Section	Area (A/B)	Level I (1)				Level II (2)				Level III (3) Potential Groundwater Impacts? (10)	Remarks Based on Historical Sampling	Results (11)	Trust Recommendations for Closure or Proposed Future Work			
			CSS Potentially > CL for individual TPH?	CSS Potentially > CL for individual PAHs?	Stockpile CSS Potentially > CL used as Backfill?	LTTD Potentially in Soil > CL?	Removed Pipeline CSS Frequency > 100 ft/sample? (4)	Abandoned Pipeline Sampling Frequency >50 ft/sample? (5)	Overeexcavation Sampling Frequency >7.5 ft/sample? (6)	SS at Each Overeexcavation? (7)	Stockpile Sampling Frequency > 50 cy/sample or none? (7)	Adequate Pressure Testing? (8)	Pressure Test Failure? (9)				
Phase I	Area 5 Section A	A/B	no	no	no	no	100	NA	NA	NA	NA	NA	no	Soil samples collected along trace of previously removed pipeline (MW, 1999).	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.	
Phase I	Area 5 Section B	A/B	no	no	no	no	92	NA	NA	NA	NA	NA	no	Soil samples collected along trace of previously removed pipeline (MW, 1999).	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.	
Phase I	Area 6 Section A	A/B	no	no	no	no	100	NA	NA	NA	NA	NA	no	Soil samples collected along trace of previously removed pipeline (MW, 1999).	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.	
Phase I	Area 6 Section B	A	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	Former pipeline extends along the approach to the Golden Gate Bridge and within the GGBHTD's maintenance yard, and therefore is not accessible for sampling (MW, 1999).	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.	
Phase II	BR9-1	A	no	no	no	no	97	54 31	NA	NA	38	yes 3 SS	no	A 197 ft length of abandoned pipeline failed pressure testing, but may not have been capped correctly. Abandoned pipeline was sampled at both ends.	Three native soil samples (3 SS) from locations BR9-1SB01 to BR9-1SB03 were <CLs for TPH and cPAHs along the section of FDS piping that failed pressure testing.	No Further Action. Section included in FDS Phase II closure request.	
Phase I	CF-3	A	yes	no	NA	no	46	NA	7.0	yes	none	yes	no	Area was remediated as part of 637 CAP, Excavation Area B.	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.	
Phase II	CF-4	A	no	no	no	no	41	NA	NA	NA	48	NA	NA	The FDS Section is within the Saltwater Ecological Protection Zone. FDS section is located at the Commissary/PX Site. Chemical concentrations in soil samples representative of soil remaining in place are above cleanup levels. Site was addressed as part of the CAP.	Addressed in Commissary/PX CAP Implementation Report	Remediation was addressed as part of the Commissary/PX CAP. Section included in FDS Phase II Closure Request.	
Phase I	CF-6	A	no	no	no	no	41	NA	NA	NA	25	NA	NA	no	--	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.
Phase I	CF-7	A	yes	yes	no	no	77	NA	10.8	yes	45	NA	NA	no	Additional excavation was conducted by the Army as part of the Crissy Field RAP and additional sampling was conducted by the Trust in the vicinity of the overexcavation. Therefore, the sampling frequency subsequent to the original FDS removal is < 7.5 ft/sample, and the FDS section is adequately characterized.	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.
Phase I	CF-8	A	no	no	no	no	75	NA	NA	NA	87	NA	NA	no	The FDS Section is within the Saltwater Ecological Protection Zone. No visibly stained soil was encountered and chemical concentrations in soil samples were all below cleanup levels. Therefore, the low sampling frequency observed in stockpiled soil is not likely an issue.	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.
Phase I	CF-9	A	no	no	no	no	89	NA	NA	NA	16	NA	NA	no	The FDS Section is within the Saltwater Ecological Protection Zone.	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.
Phase I	CF-10	A	no	no	no	no	78	NA	NA	NA	31	NA	NA	no	The FDS Section is within the Saltwater Ecological Protection Zone.	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.
Phase I	CF-11	A	no	no	no	no	44	NA	NA	NA	11	NA	NA	no	--	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.
Phase II	CF-12	A	no	no	no	no	56	NA	NA	NA	31	NA	NA	no	FDS section is located at the Commissary/PX Site. Chemical concentrations in soil samples representative of soil remaining in place are above cleanup levels. Site was addressed as part of the CAP.	Addressed in Commissary/PX CAP Implementation Report	Remediation was addressed as part of the Commissary/PX CAP. Section included in FDS Phase II Closure Request.
Phase I	MT-1	A	no	no	NA	no	109	109	NA	NA	none	yes	no	no	The FDS Section is within the Saltwater Ecological Protection Zone. No visibly stained soil was encountered and soil samples were all below cleanup levels. Therefore, the low sampling frequency of stockpiled soil, abandoned piping, and removed piping is not likely an issue.	--	Request for closure submitted to Water Board as part of FDS Phase I closure request.

Table 2
Evaluation of Data Gaps in the Fuel Distribution System Removal Program
 Presidio of San Francisco, California

FDS Closure Phase Number	FDS Section	Area (A/B)	Level I (1)				Level II (2)				Level III (3)		Remarks Based on Historical Sampling	Results (11)	Trust Recommendations for Closure or Proposed Future Work		
			CSS Potentially > CL for individual TPH?	CSS Potentially > CL for individual PAHs?	Stockpile CSS Potentially > CL used as Backfill?	LTTD Potentially in Soil > CL?	Removed Pipeline CSS Frequency > 100 ft/sample? (4)	Abandoned Pipeline Sampling Frequency >50 ft/sample? (5)	Overexcavation Sampling Frequency >7.5 ft/sample? (6)	SS at Each Overexcavation? (7)	Stockpile Sampling Frequency > 50 cy/sample or none? (7)	Adequate Pressure Testing? (8)	Pressure Test Failure? (9)	Potential Groundwater Impacts? (10)			
Phase II	MT-2	A/B	yes no	yes no	no	no	21	55	10.7	yes	47	yes	no	yes 970/971 Mini-CAP	1.) At Overexcavation # 10, chemical concentrations in soil samples representative of soil remaining in place potentially exceed cleanup levels for PAHs at sample location FM02012W02. 2.) Results for soil sample 951SS100[2.5] are >CLs for TPH within the utility trench excavation along Hoffman Street. 3.) Oily seeps observed in hillside along southern edge of Hoffman Street. 4.) Potential groundwater impacts may exist (TPH = 1,360 mg/kg at 21.5 ft bgs at sample location FM02009W21(21.5)) in the vicinity of the overexcavation north of former AST 970. Potential soil and groundwater impacts in the vicinity of the overexcavation will be addressed as part of the Building 970/971 Mini-CAP. 5.) Depth to groundwater at nearby well 970MW102 ranges from approximately 13 ft to approximately 18 ft.	1.) Soil sample at location MT-2SB01 was < CLs for cPAHs. Sample depth was adjusted due to presence of shallow bedrock at 2 ft bgs. 2.) Soil sample locations moved to edge of Hoffman Street, outside of overburden because of threat to utilities. Eight native soil samples at locations MT-2SB02 to MT-2SB05 and MT-2SB07 and were <CLs for TPH and cPAHs. Sample depth was adjusted due to presence of shallow bedrock at 2 to 2.5 ft bgs. Therefore the lateral extent of soil >CLs in the vicinity of Trust sample 951SS100(2.5) appears to be limited. 3.) Six native soil samples from locations MT-2SB03 to MT-2SB08 were <CLs for TPH and cPAHs. Additionally, no oily seeps were observed along hillside south of Hoffman Road at the time of sampling. 4.) Not applicable. Area being addressed as part of the Building 970/971 Mini-CAP.	Based on historical soil sampling along utility line, closure with land use notification recommended for the area along Hoffman Street (Area B) as part of the FDS Phase II Closure Request. Potential impacts associated with former AST 970 will be addressed and closed in the Building 970/971 Mini-CAP. The remaining portion of Section MT-2 is included in FDS Phase II Closure Request without any land use notification.

Table 2
Evaluation of Data Gaps in the Fuel Distribution System Removal Program
 Presidio of San Francisco, California

Legend

Does not meet selected criteria subsequent to Field Sampling Plan implementation or additional remedial work conducted by Trust or Army.

Abbreviations:

# - number	FSP - Field Sampling Plan
> CL - above cleanup levels	GGBHTD - Golden Gate Bridge, Highway and Transportation District
< CL - below applicable cleanup levels	IT - International Technology Corporation
Army - U.S. Army Corps of Engineers	If - linear feet
CAP - Corrective Action Plan	LTTD - low temperature thermal desorption
Commissary/PX - Commissary Post-Exchange	NA - not applicable
cPAHs - total carcinogenic polycyclic aromatic hydrocarbons	PAHs - polycyclic aromatic hydrocarbons
CSS - confirmation soil samples	RAP - Remedial Action Plan
cy - cubic yard	SS - soil sample
EKI - Erler & Kalinowski, Inc.	3 SS - 3 soil samples
FDS - fuel distribution system	T&R - Treadwell & Rollo, Inc.
ft - feet	TPH - total petroleum hydrocarbons
ft bgs - feet below ground surface	TPHd - total petroleum hydrocarbons as diesel
	TPHfo - total petroleum hydrocarbons as fuel oil

Notes:

- (1) Additional soil sampling is required for all FDS sections which fail any portion of Level I Decision Criteria (except at FDS sections where additional sampling was performed as part of a CAP or Mini-CAP). Applicable cleanup levels for each Phase II FDS section are shown on the respective figure. Changes to this table from the FSP based on the results of the field sampling are shown by striking out previous data and replacing with revised data.
- (2) Additional soil sampling may be required for FDS sections which fail any portion of Level II Decision Criteria. Changes to this table from the FSP based on the results of the field sampling are shown by striking out previous data and replacing with revised data.
- (3) An assessment of soil concentration as a function of depth or groundwater sampling is required for FDS sections which fail Level III Decision Criteria, and where additional sampling is not being conducted as part of a CAP or Mini-CAP. Where two values are indicated, the first value indicated the results before FSP implementation and the second value indicates the result after FSP implementation.
- (4) Former Water Board Order 96-070 required a sampling frequency of 100 lf/sample of pipeline removed, including one confirmation soil sample at each end of the removed length of pipeline, one confirmation soil sample at each change in pipeline direction, and one confirmation soil sample at each intersection of the FDS pipeline with lateral piping. CSS collected at a sampling frequency > 100 lf/sample for lengths of removed pipeline are highlighted in gray. Additional soil sampling conducted in native soil along lengths of former FDS pipeline as part of the FSP implementation is included in the reported sampling frequency.
- (5) Former Water Board Order 96-070 required a sampling frequency of 50 lf/sample for lengths of accessible abandoned piping. If the piping was inaccessible for sampling, the Army generally collected samples at both ends of abandoned piping. CSS collected at a sampling frequency > 50 lf/sample are highlighted in gray. Additional soil sampling conducted in native soil along lengths of abandoned FDS pipeline as part of the FSP implementation is included in the reported sampling frequency.
- (6) The Army planned to sample overexcavation lengths at a frequency of 7.5 lf/sample. Fields highlighted in gray indicate a sampling frequency of > 7.5 lf/sample. Additional soil sampling of native soil in the vicinity of the overexcavation during the FSP implementation is accounted for in the overall sampling frequency reported.
- (7) The Army recommended confirmation soil sampling for stockpiled soil at a frequency of 50 cy/sample. FDS sections where stockpiled soil was not sampled are indicated as "none". FDS sections where > 50 cy of stockpiled soil were generated and no samples were collected or FDS sections where the sampling frequency of stockpiled soil was > 50 cy/sample are highlighted in gray. Additionally, FDS sections where no soil samples were collected and < 50 cy of stockpiled soil were generated but visually stained soil was found along the FDS section (as indicated by the presence of overexcavations) are highlighted in gray. Additional sampling of the overburden during FSP implementation supplements the stockpile sampling frequency, with one overburden stockpile sample equivalent to one 4-point composite stockpile sample.
- (8) Prior to November 1996, the Army performed pressure testing on lengths of abandoned pipeline > 50 lf and collected confirmation soil samples at a frequency of 50 lf/sample of abandoned piping. Subsequently, this provision was amended and pressure testing was recommended for abandoned lengths of FDS pipeline > 20 lf, with soil samples collected from all exposed ends of abandoned piping. Grouting of all abandoned lengths of FDS pipeline was also recommended. FDS sections where lengths of abandoned piping > 50 lf were pressure tested are considered to have met the decision criteria and are indicated as "yes", otherwise "no" is indicated and the cell is highlighted in gray.
- (9) FDS sections where lengths of abandoned piping > 50 lf failed pressure testing are indicated as "yes" and highlighted in gray, otherwise "no" is indicated.
- (10) Potential groundwater impacts are based on the presence of significantly affected soil at depth (e.g., > 10 ft bgs), where the reported groundwater at the Site is generally within 15 ft of the affected soil.
- (11) For the purposes of this investigation, "overburden" refers to the soil that was excavated by the Army as part of the FDS removal program and was used as trench backfill. "Native" refers to soil that was not excavated by the Army as part of the FDS removal and remediation activities.

References:

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 T&R, 2008. *Semi-Annual Groundwater Monitoring Report, First and Second Quarters 2008, Presidio-Wide Quarterly Monitoring Program, Presidio of San Francisco (Volumes I and II)* . October.

TABLE 3
SUMMARY OF SAMPLE ANALYSES MATRIX

Presidio of San Francisco
 San Francisco, California

Sample ID (note 1)	Sample Date	Status	TPHd	TPHfo	PAHs
FDS Section BR9-1					
BR9-1SB01(5.5)	9/26/2007		X	X	X
BR9-1SB02(5.0)	9/26/2007		X	X	X
BR9-1SB03(4.5)	9/26/2007		X	X	X
FDS Section MT-2					
MT-2SB01(2.0)	9/27/2007				X
MT-2SB02(2.0)	9/27/2007		X	X	X
MT-2SB03(0.5)	10/15/2007		X	X	X
MT-2SB03(1.0)	10/15/2007		X	X	X
MT-2SB03(1.5) (note 2)	10/15/2007	Hold			
MT-2SB03(2.0) (note 2)	10/15/2007	Hold			
MT-2SB04(2.0)	9/27/2007		X	X	X
MT-2SB05(2.0)	9/27/2007		X	X	X
MT-2SB06(2.0)	9/27/2007		X	X	X
MT-2SB07(1.0)	10/15/2007		X	X	X
MT-2SB08(1.0)	10/15/2007		X	X	X

Notes:

- (1) Sampling depths were adjusted from those proposed in the field sampling plan based on encountered field conditions. The rationale for samples which were either not analyzed or where no sample was collected are explained in the notes.
- (2) Sample from proposed depth was collected but not analyzed as no staining or odors were observed.

Abbreviations:

X - Sample collected and analyzed according to Field Sampling Plan.

Hold - Sample placed on hold. No analyses requested.

TABLE 4
SUMMARY OF SOIL RESULTS FOR TPH AND CARCINOGENIC PAHS
 Presidio FDS FSP
 San Francisco, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bgs)	TPH Criteria	PAHs Criteria	Sample Type	Analytical Results (mg/kg - dry weight)							
							TPHs		Carcinogenic PAHs					
							TPH Diesel	TPH Fuel Oil	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Carcinogenic PAHs, Total
FDS Section BR9-1														
BR9-1SB01	BR9-1SB01(5.5)	9/26/2007	5.5	HH-Rec	HH-Rec	native	<1.2	<6.2	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0305
BR9-1SB02	BR9-1SB02(5.0)	9/26/2007	5	HH-Rec	HH-Rec	native	2.5 Y	14	<0.0066	<0.0066	0.0013 J	<0.0066	<0.0066	0.0013
BR9-1SB03	BR9-1SB03(4.5)	9/26/2007	4.5	HH-Rec	HH-Rec	native	4.5 Y	18	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0295
FDS Section MT-2														
MT-2SB01	MT-2SB01(2.0)	9/27/2007	2	HH-Res	HH-Res	native	--	--	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.032
MT-2SB02	MT-2SB02(2.0)	9/27/2007	2	HH-Res	HH-Res	native	49 Y	83	0.00094 J	0.0046 J	0.0034 J	<0.0062	0.0058 J	0.0147
MT-2SB03	MT-2SB03(0.5)	10/15/2007	0.5	HH-Res	HH-Res	native	270 Y	470	<0.063	<0.063	<0.063	<0.063	<0.063	<0.315
	MT-2SB03(1.0)	10/15/2007	1	HH-Res	HH-Res	native	410 Y	930	<0.14	<0.14	<0.14	<0.14	<0.14	<0.7
MT-2SB04	MT-2SB04(2.0)	9/27/2007	2	HH-Res	HH-Res	native	9.8 Y	16	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0295
MT-2SB05	MT-2SB05(2.0)	9/27/2007	2	HH-Res	HH-Res	native	4.7 Y	13	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.029
MT-2SB06	MT-2SB06(2.0)	9/27/2007	2	HH-Res	HH-Res	native	4.8 Y	<5.5	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0275
MT-2SB07	MT-2SB07(1.0)	10/15/2007	1	HH-Res	HH-Res	native	150 Y	280	<0.059	<0.059	<0.059	<0.059	<0.059	<0.295
MT-2SB08	MT-2SB08(1.0)	10/15/2007	1	HH-Res	HH-Res	native	64 Y	120	0.0065 J	0.019 J	0.024 J	0.0079 J	0.012 J	0.0694
>5 GW							15,000	15,000	na	na	na	na	na	na
Eco-T							700	980	na	0.3	na	na	na	na
HH-Rec							3,200	4,500	1	0.1	1	1	10	13
HH-Res							1,380	1,900	0.43	0.04	0.43	0.43	4.3	5.6

Abbreviations:

"--" - not analyzed

<0.50 - Compound not detected at or above indicated laboratory reporting limit

ft bgs - feet below ground surface

mg/kg - Milligrams per kilogram

na - not applicable

TPH - Total Petroleum Hydrocarbons

PAHs - Polynuclear Aromatic Hydrocarbons

J - estimated value

Y - chromatographic pattern does not resemble standard

Notes:

Abbreviations for Cleanup Levels from Water Board Order R2-2003-0080:

>5 GW (Table 3) Soil Cleanup Levels for the Protection of Water Quality at Detectable Levels, > 5 feet above the highest groundwater

Eco-T (Table 2) Soil Cleanup Levels for the Protection of Ecological Receptors, Terrestrial Receptors (less than 3 ft bgs)

HH-Rec (Table 1) Soil Cleanup Levels for the Protection of Human Health, Recreational

HH-Res (Table 1) Soil Cleanup Levels for the Protection of Human Health, Residential

TABLE 5
SUMMARY OF SOIL RESULTS FOR PAHS
 Presidio FDS FSP
 San Francisco, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bgs)	PAHs Criteria	Analytical Results (mg/kg - dry weight)																				
					Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-methylphthalene	Naphthalene	Phenanthrene	Pyrene	Carcinogenic PAHs, Total			
FDS Section BR9-1																									
BR9-1SB01	BR9-1SB01(5.5)	9/26/2007	5.5	HH-Rec	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0305	
BR9-1SB02	BR9-1SB02(5.0)	9/26/2007	5	HH-Rec	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	0.0013 J	0.0012 J	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	0.0013
BR9-1SB03	BR9-1SB03(4.5)	9/26/2007	4.5	HH-Rec	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0295
FDS Section MT-2																									
MT-2SB01	MT-2SB01(2.0)	9/27/2007	2	HH-Res	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.0064	<0.032	
MT-2SB02	MT-2SB02(2.0)	9/27/2007	2	HH-Res	<0.0062	<0.0062	<0.0062	0.00094 J	0.0046 J	0.0034 J	0.005 J	<0.0062	0.0058 J	0.0013 J	<0.0062	<0.0062	<0.0062	<0.0062	<0.0062	<0.0062	<0.0062	<0.0062	<0.0062	0.012	0.0147
MT-2SB03	MT-2SB03(0.5)	10/15/2007	0.5	HH-Res	<0.063	<0.063	<0.063	<0.063	<0.063	<0.063	0.01 J	<0.063	<0.063	<0.063	<0.063	<0.063	<0.063	<0.063	<0.063	<0.063	<0.063	<0.063	<0.063	<0.315	
	MT-2SB03(1.0)	10/15/2007	1	HH-Res	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.022 J	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.7	
MT-2SB04	MT-2SB04(2.0)	9/27/2007	2	HH-Res	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	0.0017 J+	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0295
MT-2SB05	MT-2SB05(2.0)	9/27/2007	2	HH-Res	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	0.0062	<0.029
MT-2SB06	MT-2SB06(2.0)	9/27/2007	2	HH-Res	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0275
MT-2SB07	MT-2SB07(1.0)	10/15/2007	1	HH-Res	<0.059	<0.059	<0.059	<0.059	<0.059	<0.059	0.012 J	<0.059	<0.059	<0.059	<0.059	<0.059	<0.059	<0.059	<0.059	<0.059	<0.059	<0.059	<0.059	0.006 J	<0.295
MT-2SB08	MT-2SB08(1.0)	10/15/2007	1	HH-Res	<0.032	<0.032	<0.032	0.0065 J	0.019 J	0.024 J	0.03 J	0.0079 J	0.012 J	0.0048 J	0.0044 J	<0.032	0.014 J	<0.032	<0.032	0.0039 J	0.008 J	0.0694			
HH-Rec					na	na	13,800	1	0.1	1	1,400	1	10	na	1,900	1,800	na	na	1,100	1,400	1,400	13			
HH-Res					na	na	5,900	0.43	0.04	0.43	620	0.43	4.3	na	820	770	na	na	480	600	620	5.6			

Abbreviations:

"--" - not analyzed

<0.50 - Compound not detected at or above indicated laboratory reporting limit

ft bgs - feet below ground surface

mg/kg - Milligrams per kilogram

na - not applicable

PAHs - Polynuclear Aromatic Hydrocarbons

CI - see narrative

J - estimated value

Y - chromatographic pattern does not resemble standard

Notes:

Abbreviations for Cleanup Levels from Water Board Order R2-2003-0080:

HH-Rec (Table 1) Soil Cleanup Levels for the Protection of Human Health, Recreational

HH-Res (Table 1) Soil Cleanup Levels for the Protection of Human Health, Residential

Table 6
FDS Section Summary by Closure Group
 Presidio of San Francisco, California

FDS Closure Phase I	FDS Closure Phase II (Area B)	FDS Closure Phase II (Area A)	FDS Closure Phase III	Priority One
(Closure request in review)				(Closed with 637 Area)
27 Sections	29 Sections	4 Sections	6 Sections	4 Sections
Area 5 Section A	BR1-1	BR9-1	BR5-2	CF-2 *
Area 5 Section B	BR1-2	CF-4 * (Commissary / PX CAP)	BR10-1	CF-3 *
Area 5 Section C	BR2-2	CF-12 * (Commissary / PX CAP)	MT-4	CF-4 *
Area 5 Section D	BR3-1	MT-2	MT-6 (1349 CAP)	CF-12 *
Area 6 Section A	BR3-2		MT-7 (1349 CAP)	
Area 6 Section B	BR5-3		MT-9	
BR2-1	BR6-1			
BR2-3	BR6-3			
BR3-3	BR6-5 (Commissary / PX CAP)			
BR3-4	BR7-1			
BR3-5	BR7-2			
BR4-1	BR8-1 (1065 CAP)			
BR6-2	BR10-2			
BR6-4	BR10-3			
BR11-1	BR12-1			
BR14-1	BR13-1			
CF-1	BR13-2			
CF-2 *	BR15-1			
CF-3 *	BR16-1			
CF-6	MT-3			
CF-7	MT-5			
CF-8	MT-10			
CF-9	MT-11			
CF-10	MT-12			
CF-11	MT-13			
MT-1	MT-14			
MT-8	MT-15			
	MT-16			
	MT-17			

Abbreviations:

FDS - Fuel Distribution System

* - Closure for FDS Section requested in two submittals.

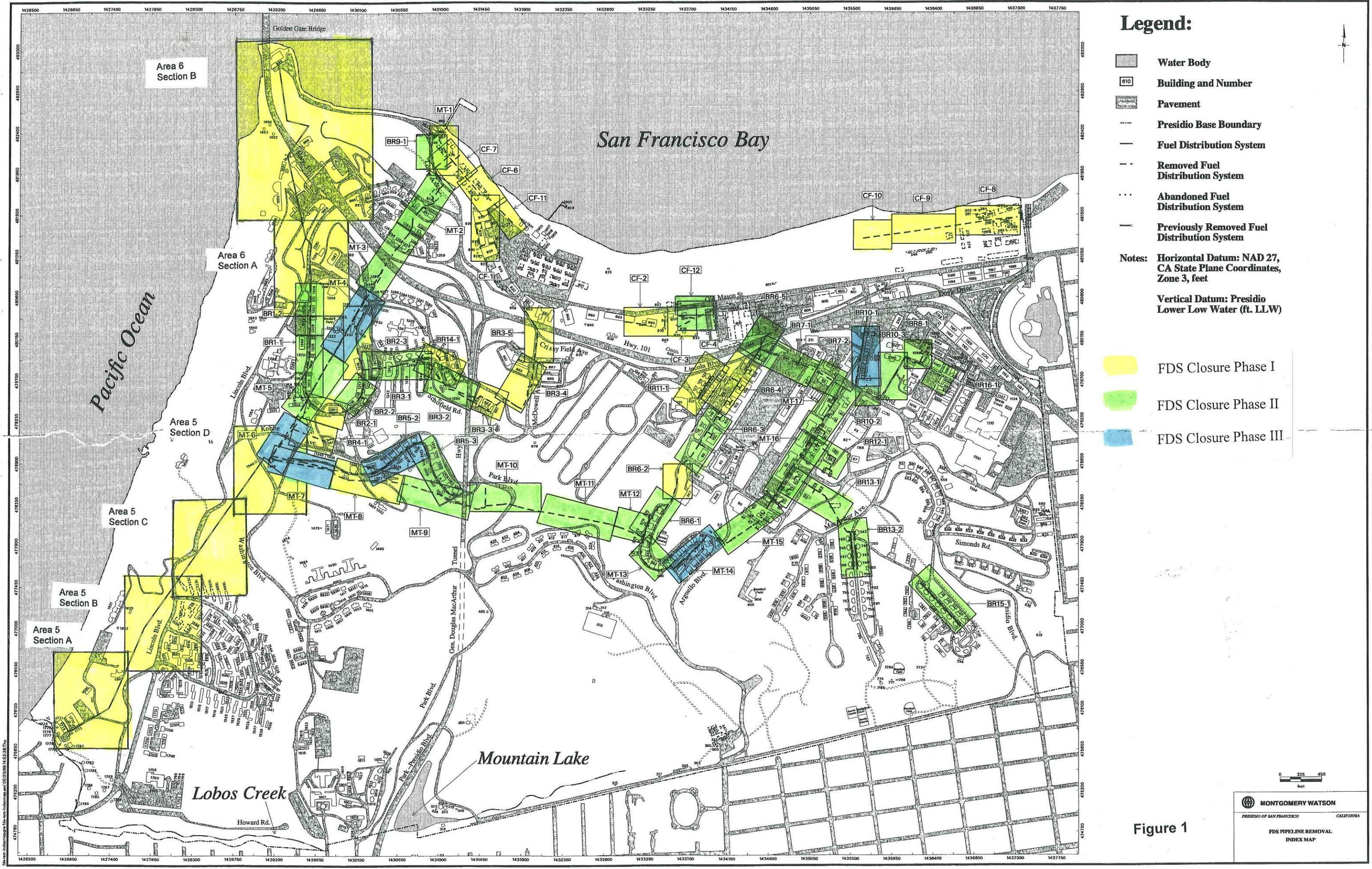
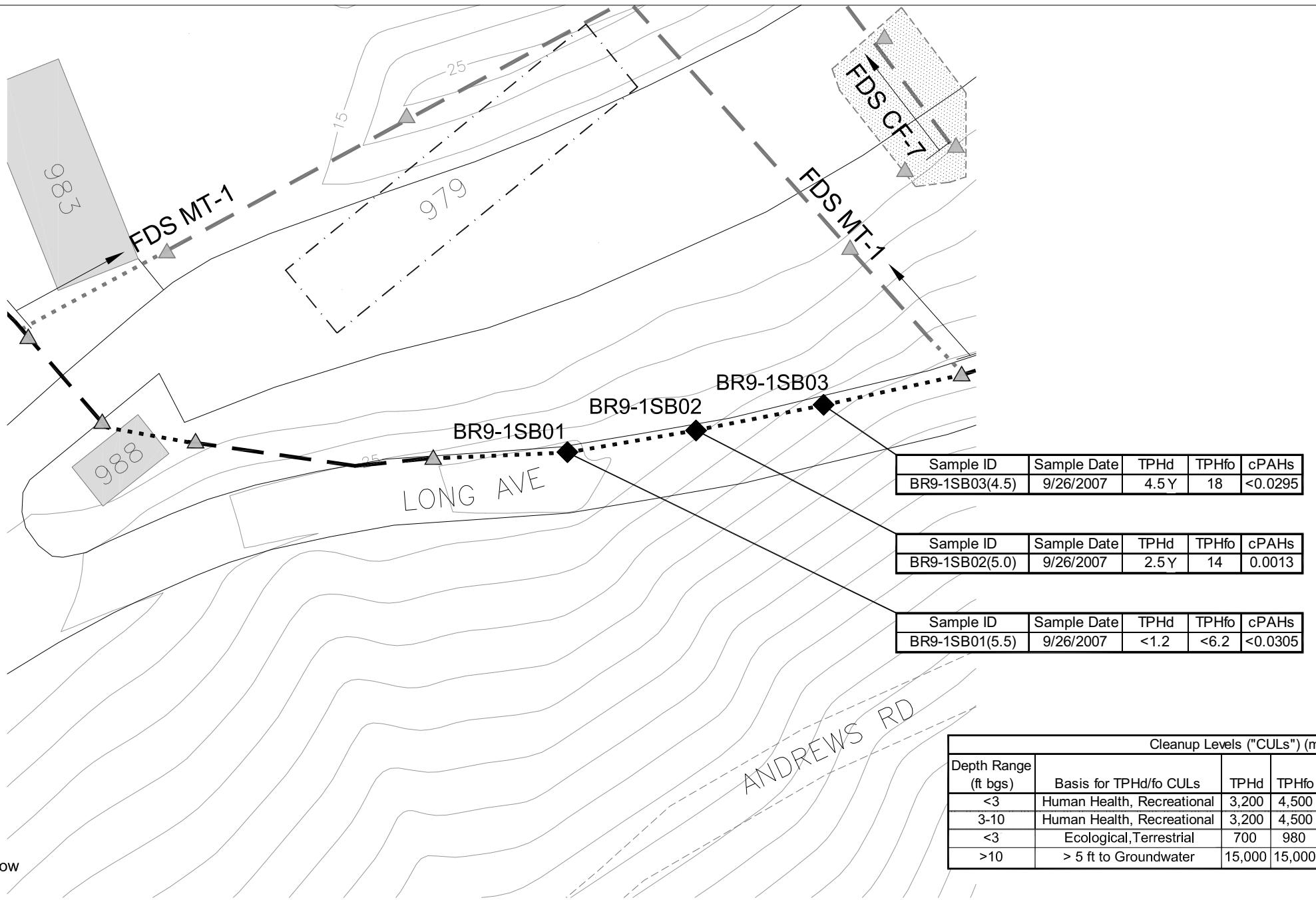


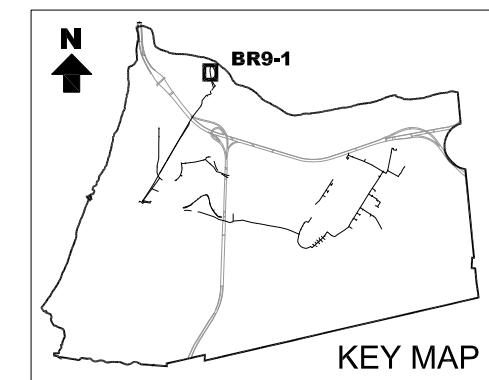
Figure 1



Abbreviations:

cPAHs	= carcinogenic Polycyclic Aromatic Hydrocarbons
FDS	= Fuel Distribution System
TPHd	= Total Petroleum Hydrocarbons as Diesel
TPHfo	= Total Petroleum Hydrocarbons as Fuel Oil
Y	= Chromatographic Pattern does not Resemble Standard

N
0 50 100
(Approximate Scale in Feet)



Erler & Kalinowski, Inc.

Soil Sampling Results at
Fuel Distribution System

Section BR9-1

Presidio Trust

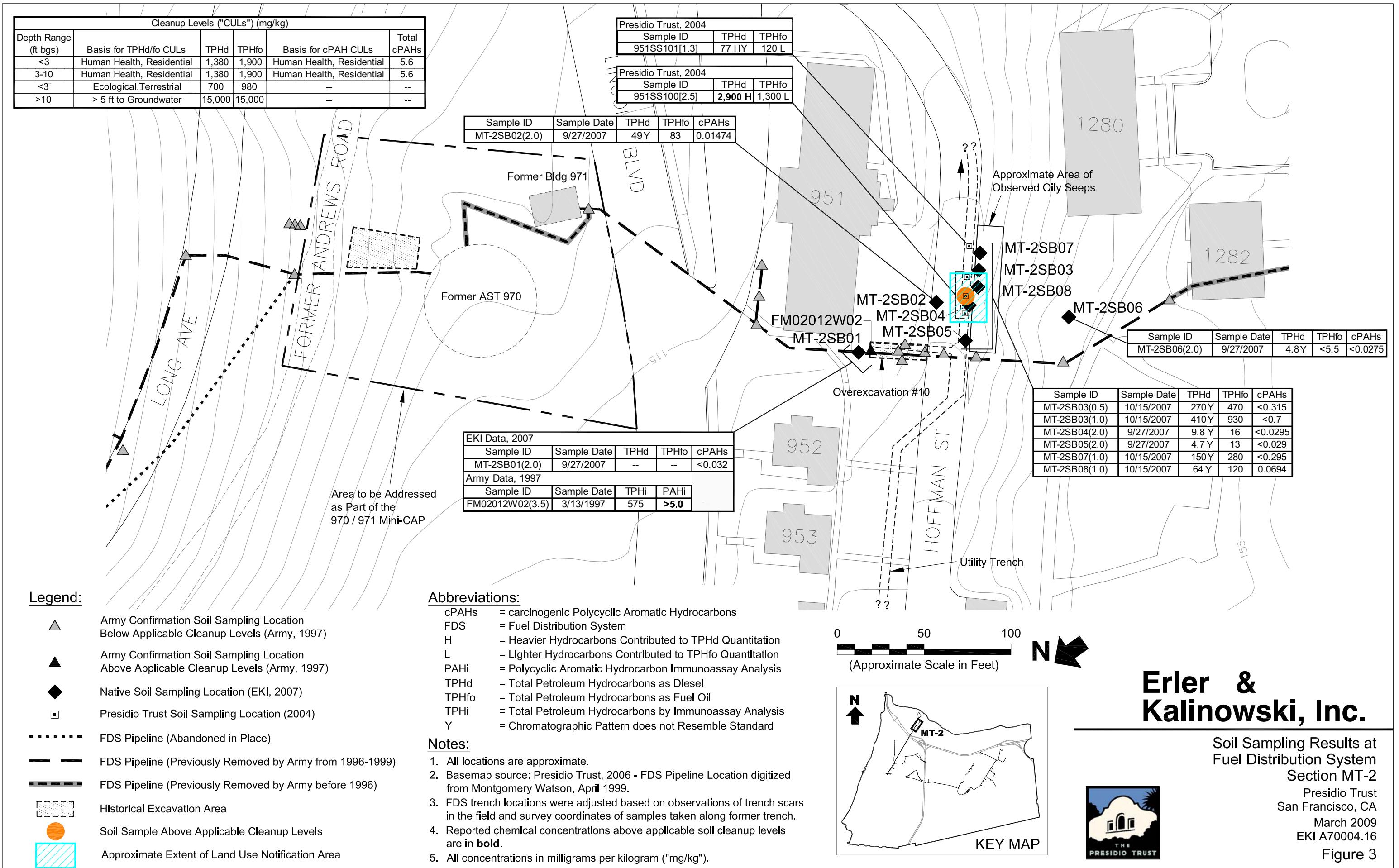
San Francisco, CA

March 2009

EKI A70004.16

Figure 2





Appendix A
FDS Data Gap Analysis Decision Logic and FDS FSP Tables

Appendix A

FDS CLOSURE DATA GAP EVALUATION DECISION LOGIC

Sampling recommendations determined using the decision logic contained herein are based on information in the fuel distribution system (“FDS”) Section figures in the FDS removal report prepared by IT on behalf of the U.S. Army Corps of Engineers (“Army”) (IT,1999) (“the IT Report”) and on compiled information located in Table 2 of this FDS FSP.

Sequential Decision Steps

- A) Army recommendation review.
- B) Identify applicable cleanup levels.
- C) Review additional remediation data.
- D) Trench and low temperature thermal desorption treated soil (“LTTD”) confirmation soil sample (“CSS”) > cleanup level (“CL”) review.
- E) Stockpile soil sample review.
- F) Abandoned pipeline sampling review.
- G) Overexcavation sampling review.
- H) Trench sampling review.

- A.) Review Army recommendation from the IT Report and identify any pre-existing areas of concern. Go to B.
- B.) Identify applicable cleanup levels for the section. Go to C.
- C.) Review available data, including additional data that may have been collected by the Trust. Determine if FDS Section is included in an existing Trust remedial site (i.e., Corrective Action Plan (“CAP”), Mini-Cap) or being addressed separately by the Trust. Exclude data gaps that are filled by additional fieldwork conducted by Trust. Go to D.
- D.) Identify any areas along the FDS pipeline where soil remaining in place may be above applicable cleanup levels (“> CL”).
 - 1.) Determine if confirmation soil samples (“CSS”) in Trench and LTTD-treated soil used as backfill are potentially > CL.
 - i.) CCS > CL because one or more of the following is true:
 - CSS potentially with total petroleum hydrocarbons (“TPH”) > CL;
 - CSS potentially with polycyclic aromatic hydrocarbons (“PAHs”) > CL; or

- CSS representative of LTTD-treated soil used as backfill potentially > CL.
→ Go to 2.
- ii.) CSS < CL for all trench and LTTD CSS. Go to E.
- 2.) Based on reported analytical data, determine if soil is likely affected.
- i.) *Soil is likely not affected.* The soil sample is potentially above cleanup level, but likely to be below cleanup levels because no visibly stained soil was encountered in the vicinity of the soil sample (i.e., no overexcavations conducted) and one of the following is true:
 - CSS is below an elevated detection limit, where the CSS is likely to be below cleanup levels (e.g., TPH < 300 mg/kg in saltwater ecological protection zone).
 - CSS exceeds a detection limit which is below the cleanup levels (e.g., TPH > 62.5 mg/kg in terrestrial ecological protection zone)

→ **Collect CSS near location where soil was potentially > CL.** Go to E.
 - ii.) *Soil is likely affected.* The soil sample is likely to be above cleanup levels, often with the presence of visibly stained soil confirmed by the Army and often with known obstacles to cleanup. These include FDS sections where:
 - soil sample results are above cleanup levels as confirmed by laboratory data (e.g., TPHd = 2,000 mg/kg with an applicable cleanup level of 1,380 mg/kg)
 - soil sample results are likely above cleanup levels based on immunoassay results (total TPH > 1,380 mg/kg with an applicable cleanup level of 1,380 mg/kg).

→ Go to 3.
- 3.) Evaluate accessibility of affected soil.
- i.) Affected soil is accessible.
→ **Collect SS in order to address current concentrations of COCs. Based on site-specific conditions, the lateral extent may be investigated now or in the future. Based on soil sampling program results, further work may be recommended.** Go to 4.

- ii.) Affected soil is not accessible because soil is
 - located beneath foundation of building or structure (e.g. loading ramp);
 - beneath historic tree or sensitive landscaping area;
 - beneath any other sensitive structure (other piping); or
 - at depth where excavation would be cost prohibitive.
- **Collect SS from Army's former SS locations where high chemical of concern ("COC") concentrations were reported in order to determine current concentration of COCs present in soil. Also collect SS to define lateral and vertical extent of affected soil to the extent possible based on accessibility. Based on soil sampling program results, further work may be recommended.** Go to 4.

4.) Assess whether there are potential groundwater impacts at the Site

- i.) COCs at depth are reported at concentrations that may potentially affect groundwater.

→ **Conduct vertical chemical profile to assess the vertical extent of chemicals of concern in soil. Collect SS at original depth where COCs were found to be > CL, collect SS beneath stained soil (or 5 feet below original sample, whichever is greater) and collect a third SS 5 feet below second sample. Additionally, if groundwater is encountered during sampling activities, a groundwater sample will also be collected.** Go to E.
- ii.) COCs are not, or are not likely, to be encountered at concentrations greater than cleanup levels at depths within 5 feet of groundwater. This conclusion is based on professional judgment and determined on a case-by-case basis.

→ **No samples warranted to assess this criterion.** Go to E.

E.) Stockpiled Soil

1.) Determine disposal and reuse of stockpiled soil.

- i.) Stockpiled soil was reused as backfill → Go to 2.
- ii.) Stockpiled soil was disposed offsite → **No samples warranted to assess this criterion.** Go to F.

2.) Assess whether CSS collected from stockpiled soil were > CL.¹

- i.) Yes → Go to 3i.
- ii.) No → Go to 3ii.
- iii.) No stockpile samples collected → Go to 3iii.

3.) Assess whether sampling frequency of stockpiled soil is adequate, based on IT Report.

- i.) < 50 cy/sample → **Collect CSS at stations where soil > CL was used as backfill in order to assess if remediation is needed. If no area is specified, collect overburden CSS every 100 linear feet (“lf”) of trench backfilled with stockpiled soil.² [NOTE: Collect discrete soil samples, not 4-point composites.]** Go to F.
> 50 cy/sample → **Collect overburden CSS every 100 lf along trench length where stockpiled soil was used as backfill in order to assess if remediation is needed.² [NOTE: Collect discrete soil samples, not 4-point composites.]** Go to F.
- ii.) < 50 cy/sample → **No samples warranted to assess this criterion.** Go to F.
> 50 cy/sample or no samples collected → Go to 4.
- iii.) Stockpile < 50 cy → **No samples warranted to assess this criterion.** Go to F.
Stockpile > 50 cy → Go to 4.

4.) Consider sampling frequency of CSS from trench.

- i.) Removed pipeline sampling < 100 lf/sample and no CSS > CL → Go to 5i.

¹ The Army's FDS program stipulated that stockpiled soil to backfill trenches was to be reused in accordance with discharge criteria of TPH <100 mg/kg and total PAHs <5.6 mg/kg in all FDS sections located outside of the Crissy Field area. FDS sections within the Crissy Field area were to meet a discharge criteria of TPH <100 mg/kg, total PAHs < 4.0 mg/kg, and concentrations of benzene, toluene, ethylbenzene and xylenes could not be above reporting limits. Since stockpiled soil is already in place, the Trust chose to compare stockpiled sample concentrations to applicable cleanup levels rather than the Army's discharge criteria.

² One sample of overburden every 100 lf is estimated to be approximately 1 soil sample every 22 cubic yards if the typical FDS excavation trench is assumed to be 2 feet deep by 3 feet wide.

- ii.) Removed pipeline sampling > 100 lf/sample or <100 lf/sample with CSS > CL → Go to 5ii.
- 5.) Consider where visibly stained soil was encountered during excavation activities (i.e., overexcavations were conducted along FDS Section).
- i.) Overexcavations conducted in area of trench backfilled with stockpiled soil. → **Collect overburden CSS (within backfill) in order to increase “stockpile” sampling frequency to 50 cy/sample. [NOTE: Collect discrete soil samples, not 4-point composites.]** Go to F.
No overexcavations conducted area of trench backfilled with stockpiled soil → **No samples warranted to assess this criterion.** Go to F.
 - ii.) Overexcavations conducted in area of trench backfilled with stockpiled soil. → **Collect overburden CSS (within backfill) every 100 lf in order to assess if remediation is needed. [NOTE: Collect discrete soil samples, not 4-point composites.]** Go to F.
No overexcavations conducted in area of trench backfilled with stockpiled soil → **No samples warranted to assess this criterion.** Go to F.

F.) Abandoned piping

- 1.) Determine whether sampling criteria and pressure testing criteria were met, including the following:
- CCS collected at frequency of 50 lf/sample for abandoned piping
 - CSS collected from all ends of abandoned piping and changes in direction.
- i.) Sampling frequency criteria are met → Go to 3.
 - ii.) If any sampling frequency criteria are not met → Go to 2.
- 2.) Evaluate the accessibility of the abandoned length of pipeline with regard to sampling criteria data gaps.
- i.) Sampling criteria data gaps due to inaccessibility of abandoned piping → Go to 3.
 - ii.) Sampling criteria gaps may be addressed through additional sampling → **Collect CSS along abandoned pipeline to meet sampling criteria.** Go to 3.

- 3.) Assess pressure testing results for each applicable lengths of abandoned pipeline.
- i.) Passed pressure testing → **No samples warranted to assess this criterion.** Go to G.
 - ii.) Failed pressure testing → **Evaluate abandoned pipeline on case-by-case basis.** Go to G.

G.) Overexcavation

- 1.) For each overexcavation, determine whether CSS were collected.
 - i.) Yes → Go to 2.
 - ii.) No → **Collect CSS at unsampled excavation, with sample frequency of 7.5 lf/sample for the overexcavation.** Go to H.
- 2.) Determine whether any CSS > CL.
 - i.) Yes → **Collect SS at sampling location reported to contain chemicals of concern > CL.** Based on results of additional sampling, **further work may be recommended.** Go to 3.
 - ii.) No → Go to 3.
- 3.) Determine adequacy of CSS sampling frequency.
 - i.) < 7.5 lf/sample → **No samples warranted to assess this criterion.** Go to H.
 - ii.) > 7.5 lf/sample → **Collect CSS on case-by-case basis, depending on excavation shape and soil accessibility to meet sampling frequency requirements.** Go to H.

H.) Trench

If CSS frequency >100 lf/sample, then evaluate site on case-by-case basis. If stockpile sampling is adequate (and overexcavations were adequately sampled or there were no overexcavations), then trench as a whole may be adequately characterized.

Table 1
General Decision Criteria for Determination of Additional Work
to be Conducted at Individual Fuel Distribution System Sections

Presidio of San Francisco, California

Level I Decision Criteria

If:

- * Chemical concentrations in confirmation soil samples were above applicable cleanup levels (i.e., TPH, PAHs, or BTEX), (a)
- * Chemical concentrations in stockpile soil samples are above applicable cleanup levels for TPH, PAHs, or for BTEX and such stockpiled soil was used as backfill; and/or
- * Chemical concentrations in LTTD treated soil are potentially above applicable cleanup levels and such LTTD-treated soil was used to backfill trenches or excavations,

Then:

- * Collect soil samples or confirmation soil samples to assess horizontal and vertical extent of affected soil.

Else:

- * Go to Level II Criteria.

Level II Decision Criteria (b)

If:

- * Removed pipeline confirmation soil sampling frequency was greater than 100 lf/sample;
- * Abandoned pipeline sampling frequency was greater than 50 lf/sample;
- * Overexcavation confirmation soil sampling frequency was greater than 7.5 lf/sample;
- * Confirmation soil samples were not collected at each overexcavation;
- * Stockpile soil sampling frequency was greater than 50 cy/sample where soil was used as backfill (c);
- * Abandoned lengths of pipe greater than 20 lf were not pressure tested; and/or
- * Abandoned piping failed pressure testing criterion.

Then:

- * Collect confirmation soil samples as appropriate to address data gaps. The need for sampling is often dictated by the presence of visually contaminated soil or the performance of overexcavation along the FDS section.

Else:

- * Go to Level III Criteria.

If:

- * Potential groundwater impacts may exist (e.g., high chemical concentrations at depths greater than 10 ft bgs where groundwater may be relatively shallow).

Then:

- * Evaluate chemical concentrations as a function of depth at sample location where petroleum hydrocarbons could potentially impact groundwater.

Table 1
General Decision Criteria for Determination of Additional Work
to be Conducted at Individual Fuel Distribution System Sections
Presidio of San Francisco, California

Abbreviations:

BTEX - Benzene, toluene, ethylbenzene, xylenes
cy- cubic yards
FDS- Fuel Distribution System
ft bgs- feet below ground surface
ft- feet
lf- linear feet
LTTD- Low-Temperature Thermal Desorption
PAHs- Polycyclic Aromatic Hydrocarbons
RWQCB- Regional Water Quality Control Board
TPH- Total Petroleum Hydrocarbons

Notes:

- (a) Applicable cleanup levels used by the Army were obtained from former RWQCB Order 96-070. The same cleanup levels were incorporated into the current Order for the Presidio, RWQCB Order R2-2003-0080. The current Order also includes cleanup levels for petroleum hydrocarbons and related constituents for sites within the saltwater and freshwater ecological protection zones. Application of the freshwater ecological protection zone values is described in the document prepared by BBL, entitled "Draft Development of Freshwater TPH-diesel and TPH-fuel oil Point of Compliance Concentrations, Presidio of San Francisco, California" and dated 15 July 2005.
- (b) Level II Decision Criteria originate from the testing and sampling requirements included in former RWQCB Order 96-070.
- (c) Stockpiled soil potentially used as backfill was overburden soil from the removal of FDS piping. If chemical concentrations in stockpiled soil were greater than applicable cleanup levels, stockpiled soil was supposed to be either treated at the LTTD unit or disposed off-site.

Table 2
Evaluation of Data Gaps in Fuel Distribution System Removal Program
 Presidio of San Francisco, California

FDS Closure Phase Number	FDS Section	Area (A/B)	Army Recommendation	Trust Recommendation	Level I (1)				Level II (2)				Level III (3) Potential Groundwater Impacts? (10)	Remarks	Trust Recommendations for Proposed Future Work (11)	# Samples Analyzed for TPH (EPA 8015m)	# Samples Analyzed for PAHs (EPA 8270C)	# Samples Analyzed for BTEX (EPA 8021)		
					CSS Potentially > CL for individual TPH?	CSS Potentially > CL for individual PAHs?	Stockpile CSS Potentially > CL used as Backfill?	LTTD Potentially in Soil > CL?	Removed Pipeline CSS Frequency > 100 ft/sample? (4)	Abandoned Pipeline Sampling Frequency >50 ft/sample? (5)	Overexcavation Sampling Frequency >7.5 ft/sample? (6)	SS at Each Overexcavation?								
Phase I	Area 5 Section A	B	NFA	NFA	no	no	no	no	100	NA	NA	NA	NA	NA	no	CSS collected along trace of previously removed pipeline.	Request for closure submitted to Water Board.	0	0	0
Phase I	Area 5 Section B	B	NFA	NFA	no	no	no	no	92	NA	NA	NA	NA	NA	no	CSS collected along trace of previously removed pipeline.	Request for closure submitted to Water Board.	0	0	0
Phase I	Area 5 Section C	B	NFA	NFA	no	no	no	no	100	NA	NA	NA	NA	NA	no	CSS collected along trace of previously removed pipeline.	Request for closure submitted to Water Board.	0	0	0
Phase I	Area 5 Section D	B	NFA	NFA	no	no	no	no	100	NA	NA	NA	NA	NA	no	CSS collected along trace of previously removed pipeline.	Request for closure submitted to Water Board.	0	0	0
Phase I	Area 6 Section A	B	NFA	NFA	no	no	no	no	100	NA	NA	NA	NA	NA	no	CSS collected along trace of previously removed pipeline.	Request for closure submitted to Water Board.	0	0	0
Phase I	Area 6 Section B	B	NFA	NFA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA		Former pipeline extends along the approach to the Golden Gate Bridge and within the GGBHTD's maintenance yard, and therefore is not accessible for sampling.	Request for closure submitted to Water Board.	0	0	0
TBD	BR1-1	B	CSS	CSS	no	no	no	no	76	53	5.0	yes	190	no	no	Stockpiled soil was inadequately sampled and TPH concentrations potentially exceeding cleanup levels (TPH > 100 mg/kg), was transported to LTTD unit for treatment. Trench backfilled with LTTD soil. Additionally, a 105 ft length of abandoned pipeline was not pressure tested and was inadequately sampled.	Collect two CSS from the overburden at 2 ft bgs (approximately 50 cy/sample for stockpiled soil) along the removed FDS pipeline and analyze for TPH. Collect one native CSS at 4.5 ft bgs along 105 ft length of abandoned piping and analyze for TPH and PAHs.	3	1	0
TBD	BR1-2	B	Mini-CAP	SS	yes	yes	no	no	24	NA	5.0	yes	53	NA	NA	TPH and PAH concentrations in confirmation soil samples exceed cleanup levels at overexcavations adjacent to Buildings 1206 and 1207. The excavation extents were limited by the adjacent buildings.	Collect ten native SS at 3 and 6.5 ft bgs within or near the overexcavations adjacent to Buildings 1206 and 1207 and analyze for TPH and PAHs. Additionally, the stockpile sampling frequency slightly exceeds 50 cy/sample. However, no CSS are recommended by EKI at this time because the stockpile sampling frequency is close to the required number.	10	10	0
Phase I	BR2-1	B	NFA	NFA	no	no	no	no	142	NA	NA	NA	130	NA	NA	No visibly stained soil was encountered and chemical concentrations in CSS were all below cleanup levels. Therefore, the low sampling frequency observed in stockpiled soil and removed piping is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
TBD	BR2-2	B	NFA	SS	yes	yes	no	no	91	48	NA	NA	83	yes	no	One CSS, representative of soil remaining in place, potentially exceeds cleanup levels (> 575 mg/kg TPH and > 5 mg/kg PAHs). Access restrictions due to the presence of Building 1220 were cited as the reason for lack of remediation.	Collect two native SS at 3 ft bgs and one native SS 3 and 6 ft bgs and analyze for TPH and PAHs.	4	4	0
Phase I	BR2-3	B	NFA	NFA	no	no	no	no	40	17	6.3	yes	87	yes	no	No visibly stained soil was encountered and chemical concentrations in CSS were all below cleanup levels and stockpile was disposed offsite. Therefore, the low sampling frequency observed in stockpiled soil is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
TBD	BR3-1	B	Mini-CAP	CSS, SS	yes	yes	no	no	44	56	5.3	yes	20	yes	yes	PAH and TPH concentrations in confirmation soil samples exceed cleanup levels next to Building 1224, 1241, and 1244. In each case, the excavation was limited by the adjacent building. A 75 ft length of piping beneath Building 1241 failed pressure testing criterion but was sampled at both ends.	Collect three native CSS at soil sample locations potentially above cleanup levels. Evaluate the vertical extent of potentially affected soil by collecting a native SS five feet below each CSS and analyze for TPH and PAHs. Analyze for PAHs only at sample locations BR3-1SB01 and BR3-1SB03. Analyze for TPH and PAHs at sample location BR3-1SB02.	2	6	0
TBD	BR3-2	B	Mini-CAP	SS	yes	yes	no	no	99	NA	3.8	yes	19	NA	no	PAH and TPH concentrations in confirmation soil samples exceed cleanup levels in excavation adjacent to tree #5231. The excavation extent was limited by the tree.	Additional excavation would require tree removal. In lieu of tree removal, collect three native SS at 9.5, 14.5, and 19.5 ft bgs to assess vertical extent of affected soil remaining in place and analyze for TPH and PAHs.	3	3	0
Phase I	BR3-3	B	NFA	NFA	no	no	no	no	65	17	NA	NA	10	yes	no	--	Request for closure submitted to Water Board.	0	0	0
Phase I	BR3-4	B	NFA	NFA	no	no	no	no	53	NA	NA	NA	97	NA	NA	No visibly stained soil was encountered and chemical concentrations in CSS were all below cleanup levels. Therefore, the low sampling frequency observed in stockpiled soil is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
Phase I	BR3-5	B	NFA	NFA	no	no	NA	no	73	NA	NA	NA	none	NA	NA	No stockpile samples collected for 97 cy of stockpiled soil used to backfill trench. Confirmation soil samples in trench were <CLs and no visibly stained soil encountered; no overexcavations conducted. Therefore, the lack of stockpiled soil samples is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
Phase I	BR4-1	B	NFA	NFA	no	no	no	no	70	20	14.0	yes	50	yes	yes	Pipeline failed pressure testing, but was sampled with adequate frequency. The overexcavation was adequately sampled as part of the FDS MT-7 pipeline removal. Therefore, the section appears to be adequately characterized.	Request for closure submitted to Water Board.	0	0	0

Table 2
Evaluation of Data Gaps in Fuel Distribution System Removal Program
 Presidio of San Francisco, California

FDS Closure Phase Number	FDS Section	Area (A/B)	Army Recommendation	Trust Recommendation	Level I (1)						Level II (2)						Level III (3) Remarks	Trust Recommendations for Proposed Future Work (11)	# Samples Analyzed for TPH (EPA 8015m)	# Samples Analyzed for PAHs (EPA 8270C)	# Samples Analyzed for BTEX (EPA 8021)
					CSS Potentially > CL for individual TPH?	CSS Potentially > CL for individual PAHs?	Stockpile CSS Potentially > CL used as Backfill?	LTTD Potentially in Soil > CL?	Removed Pipeline CSS Frequency > 100 ft/sample? (4)	Abandoned Pipeline Sampling Frequency >50 ft/sample? (5)	Overexcavation Sampling Frequency >7.5 ft/sample? (6)	SS at Each Overexcavation?	Stockpile Sampling Frequency > 50 cy/sample or none? (7)	Adequate Pressure Testing? (8)	Pressure Test Failure? (9)	Potential Groundwater Impacts? (10)					
TBD	BR5-2	B	Mini-CAP	CSS, SS	yes	yes	no	no	77	9	5.0	yes	275	yes	no	no	PAH and TPH concentrations in confirmation soil samples exceed cleanup levels in the vicinity of Building 1328, where access to soil excavation was limited by a gas line. TPH concentrations may potentially exceed cleanup levels at the lateral near Building 1326. Additionally, the stockpile sampling frequency is inadequate and uncertainty exists as to whether LTTD soil or stockpiled soil potentially above cleanup levels was used to backfill the trench between Station 9+00 and Station 11+00 .	Collect six native SS at 2, 2.5 and 5.5 ft bgs to define lateral and vertical extent of affected soil at Bldg 1328 and analyze for TPH and PAHs. Collect one native CSS at 2.5 ft bgs at the end of the lateral near Building 1326 and analyze for TPH. Collect two overburden CSS at 1.5 ft bgs between Station 9+00 and Station 11+00 and analyze for TPH and PAHs to achieve a frequency of 100 lf/sample.	9	8	0
TBD	BR5-3	B	CSS	CSS	no	no	NA	no	84	71	5.0	yes	none	yes	yes	no	A 105 ft length of pipeline near Building 1308 and 1310 failed pressure testing criteria and was not sampled at one end. No stockpile samples were collected for 257 cy of stockpiled soil used as backfill. However, trench associated with stained soil was backfilled with LTTD soil, and remaining trench length was shallow (~2.5 ft bgs) therefore back fill was mainly composed of imported soil (from 0 to 1.5 ft bgs) and no visibly stained soil was collected in area of trench backfilled with stockpiled soil. Significant lengths of lengths of FDS pipeline were abandoned in place due to concerns that the integrity of an adjacent gas line would be compromised. These lengths were deemed inaccessible.	Collect two CSS at 2.5 ft bgs along the length of 105 ft abandoned pipeline that failed pressure testing criterion. Collect two native CSS at 2.5 ft bgs at the unsampled ends of abandoned pipeline between Buildings 1300 and 1308. Analyze all CSS for TPH and PAHs.	4	4	0
TBD	BR6-1	B	NFA	CSS	no	no	NA	no	74	15	4.3	yes	none	yes	no	no	No samples were collected from 133 cy of stockpiled soil from an FDS section were visibly stained soil, based on the presence of overexcavations conducted near building 325 and between Buildings 326 and 327.	Collect three overburden CSS from the overburden (approximately 50 cy/sample for stockpiled soil) at 1.5 ft bgs and analyze for TPH and PAHs.	3	3	0
Phase I	BR6-2	B	NFA	NFA	no	no	no	no	96	NA	NA	NA	119	NA	NA	no	No visibly stained soil was encountered and chemical concentrations in CSS were all below cleanup levels. Therefore, the low sampling frequency observed in stockpiled soil is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
TBD	BR6-3	B	Mini-CAP	CSS, SS	yes	yes	no	no	46	NA	3.3	yes	50	NA	NA	no	TPH and PAH concentrations in CSS representative of soil remaining in place exceed cleanup levels. The excavation extent was limited by Building 101 or was at the historical sewer. Based on water levels from nearby well 100GW101, the depth of groundwater is anticipated to be more than 50 feet. Therefore, potential impacts to groundwater are unlikely.	Conduct soil profiling at sample location BR6-3SB01 by collecting three native SS at 10, 15, and 20 ft bgs and analyze for TPH. Collect one native CSS at sample location at BR6-3SB02 at 2.5 ft bgs and analyze for TPH and PAHs. Collect one native CSS at soil sample location BR6-3SB03 at 2.5 ft bgs and analyze for TPH.	5	1	0
Phase I	BR6-4	B	NFA	NFA	no	no	no	no	48	NA	3.8	yes	72	NA	NA	no	No visibly stained soil was encountered and chemical concentrations in CSS were all below cleanup levels. Therefore, the low sampling frequency observed in stockpiled soil is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
TBD	BR6-5	B	Commissary/PX CAP	Commissary/PX CAP	yes	yes	no	no	44	24	6.2	yes	42	yes	no	yes	A portion of the FDS section is located at the Commissary/PX Site. Chemical concentrations in CSS representative of soil remaining in place are above cleanup levels. Site was addressed as part of the CAP (T&R, 2005).	No further action.	0	0	0
TBD	BR7-1	B	NFA	CSS	no	no	yes	no	44	33	NA	NA	204	yes	no	no	Inadequate number of stockpile soil samples collected and the stockpile soil used as backfill exceeded cleanup levels for PAHs for CSS samples.	Collect seven overburden CSS at 2 ft bgs (approximately 100 lf/sample for removed pipeline) along length of removed pipeline and analyze for PAHs.	0	7	0
TBD	BR7-2	B	NFA	CSS	no	no	NA	no	81	NA	4.0	yes	none	NA	NA	no	No stockpile samples were collected from 66 cy of stockpiled soil at an FDS section were visibly stained soil was encountered and an excavation was conducted.	Collect two CSS from the overburden (approximately 50 cy/sample for stockpiled soil) at 2 ft bgs and analyze for TPH and PAHs.	2	2	0
TBD	BR8-1	B	Building 1065 CAP	Building 1065 CAP	yes	no	no	no	42	NA	4.4	yes	60	NA	NA	no	FDS section is located at the Building 1065 Site. Chemical concentrations in CSS representative of soil remaining in place are above cleanup levels. Area was addressed as part of an interim remedial action at the Site.	No further action.	0	0	0
TBD	BR9-1	A	NFA	CSS	no	no	no	no	97	54	NA	NA	38	yes	yes	no	A 197 ft length of abandoned pipeline failed pressure testing, but may not have been capped correctly. Abandoned pipeline was sampled at both ends.	Collect three native CSS, between 4.5 and 6 ft bgs, along length of abandoned piping, where accessible, and analyze for TPH and PAHs.	3	3	0

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FDS Closure Phase Number	FDS Section	Area (A/B)	Army Recommendation	Trust Recommendation	Level I (1)				Level II (2)				Level III (3) Potential Groundwater Impacts? (10)	Remarks	Trust Recommendations for Proposed Future Work (11)	# Samples Analyzed for TPH (EPA 8015m)	# Samples Analyzed for PAHs (EPA 8270C)	# Samples Analyzed for BTEX (EPA 8021)			
					CSS Potentially > CL for individual TPH?	CSS Potentially > CL for individual PAHs?	Stockpile CSS Potentially > CL used as Backfill?	LTTD Potentially in Soil > CL?	Removed Pipeline CSS Frequency > 100 ft/sample? (4)	Abandoned Pipeline Sampling Frequency >50 ft/sample? (5)	Overexcavation Sampling Frequency >7.5 ft/sample? (6)	SS at Each Overexcavation?									
TBD	BR10-1	B	Mini-CAP	SS (LTTD), CSS, Bldg 207/231 CAP	yes	yes	no	yes	28	17	7.4	yes	49	yes	no	yes	The FDS Section is within the freshwater protection zone. TPH concentrations in two CSS may potentially exceed freshwater cleanup levels in the overexcavation near Building 220. Additionally, LTTD-treated soil was used as backfill in three excavations along Halleck Street, and no post-treatment data are available for this soil. TPH and PAH concentrations in one CSS exceeds freshwater and other cleanup levels at Building 228, where groundwater may also be potentially affected. However, remediation of soil and potentially affected groundwater near Building 228 is being addressed in the Building 207/231 CAP.	Collect two native CSS at 3 ft bgs at sampling locations BR10-1SB02 and BR10-1SB03 and analyze for TPH. Collect five overburden SS within the LTTD-treated soil in excavations along Halleck St. and analyze for TPH, PAHs, and BTEX.	7	5	5
TBD	BR10-2	B	NFA	CSS	yes	no	NA	no	58	5	NA	NA	none	yes	no	no	The FDS Section is within the freshwater ecological protection zone. TPH concentration for one confirmation soil sample potentially above freshwater cleanup levels. The stockpile is < 50 cy and no visibly stained soil was encountered (i.e. no overexcavations conducted). Therefore, no additional stockpile sampling is needed.	Collect one native CSS at 3 ft bgs at sample location BR10-2SB01 and analyze for TPH.	1	0	0
TBD	BR10-3	B	NFA	SS (LTTD), CSS	no	no	NA	yes	78	NA	3.0	yes	none	NA	NA	no	The FDS Section is within the freshwater protection zone. LTTD-treated soil used as overexcavation backfill and location is within the freshwater protection zone. Specific chemical data are not available for LTTD-treated soil. Therefore, chemical concentrations may be above freshwater cleanup levels. Stockpile is < 50 cy and the Army did not conduct stockpile sampling. Stained soil was encountered during excavation and an overexcavation was conducted.	Collect one overburden SS at 2.5 ft bgs from LTTD-treated soil at the excavation site and analyze for TPH, PAHs and BTEX. Collect one CSS at 1.5 ft bgs from the overburden and analyze for TPH and PAHs.	2	2	1
Phase I	BR11-1	B	NFA	NFA	no	no	no	no	48	NA	NA	NA	18	NA	NA	no	--	Request for closure submitted to Water Board.	0	0	0
TBD	BR12-1	B	Mini-CAP	SS	yes	no	no	no	33	NA	3.0	yes	16	NA	NA	no	TPH concentrations in confirmation soil samples exceed cleanup levels at lateral adjacent to Building 59. The excavation extent was limited by tree adjacent to Building 59.	Additional excavation would require tree removal. In lieu of tree removal, collect three native SS at 2 and 5.5 ft bgs and analyze for TPH to assess vertical and horizontal extent of TPH-affected soil.	3	0	0
TBD	BR13-1	B	NFA	CSS	yes	no	no	no	52	35	6.0	yes	126	no	no	no	The FDS Section is within the freshwater ecological protection zone. One confirmation soil sample, representative of soil remaining in place, potentially exceeds cleanup levels for freshwater protection (<1,380 mg/kg at 5 ft bgs). Stockpile soil sampling frequency is > 50 cy and overexcavation was conducted. A 131 ft length of FDS pipeline and associated lateral pipeline between Building 11 and 12 was not pressure tested, but was adequately sampled.	Collected one native CSS at 5 ft bgs at Army sample location FM16111L10, located west of Barnard Ave., and analyze for TPH. Collect two CSS, at 2 ft bgs, from overburden to meet the 50 cy/sample stockpile sampling frequency requirement and analyze for TPH and PAHs.	3	2	0
TBD	BR13-2	B	Mini-CAP	NFA	yes	no	no	no	49	NA	2.2	yes	18	NA	NA	no	The FDS Section is within the freshwater ecological protection zone, but outside the zone of application for freshwater cleanup, and therefore terrestrial cleanup levels are applicable. TPH remaining in soil > CL in the vicinity of Building 748/750 is inaccessible due to the presence of nearby utility lines. Additionally, a Mini-Cap has been conducted in the vicinity of the former UST between buildings 748/750, wherein soil and groundwater was not found to be > CL.	Soil and groundwater in the vicinity of the affected area at Building 748/750 were sufficiently characterized by the Mini-CAP conducted by the Army from 1994-1995 (MW, 1999). Therefore, no further action is recommended.	0	0	0
Phase I	BR14-1	B	NFA	NFA	no	no	no	no	76	NA	NA	NA	57	NA	NA	no	No visibly stained soil was encountered and chemical concentrations in CSS were all below cleanup levels. Therefore, the low sampling frequency observed in stockpiled soil is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
TBD	BR15-1	B	NFA	NFA	no	no	no	no	59	4	NA	NA	54	yes	no	no	The FDS Section is within the freshwater ecological protection zone. No visibly stained soil was encountered and CSS were all below cleanup levels. Therefore, it is unlikely that chemicals of concern are inadequately characterized due to low sampling frequency observed in stockpiled soil.	No further action.	0	0	0
TBD	BR16-1	B	NFA	NFA	no	no	no	no	20	NA	NA	NA	4	NA	NA	no	--	No further action.	0	0	0
Phase I	CF-1	A	NFA	NFA	no	no	no	no	71	NA	NA	NA	42	NA	NA	no	--	Request for closure submitted to Water Board.	0	0	0
Phase I	CF-2	A	NFA	NFA	no	no	no	no	36	105	NA	NA	7	no	no	no	Pressure testing could not be conducted as pipe was already cut, and one end of pipeline is inaccessible beneath Building 640.	Request for closure submitted to Water Board.	0	0	0
Phase I	CF-3	A	Building 637 CAP	Building 637 CAP	yes	no	NA	no	46	NA	7.0	yes	none	yes	no	no	Area was remediated as part of 637 CAP, Excavation Area B.	Request for closure submitted to Water Board.	0	0	0
TBD	CF-4	A	Commissary/PX CAP	Commissary/PX CAP	yes	no	no	no	41	NA	NA	NA	48	NA	NA	no	The FDS Section is within the saltwater ecological protection zone. FDS section is located at the Commissary/PX Site. Chemical concentrations in CSS representative of soil remaining in place are above cleanup levels. Site was addressed as part of the CAP.	Remediation was addressed as part of the Commissary/PX CAP. No further action is recommended as part of FDS data gap analysis.	0	0	0

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					CSS Potentially > CL for individual TPH?	CSS Potentially > CL for individual PAHs?	Stockpile CSS Potentially > CL used as Backfill?	LTTD Potentially in Soil > CL?	Removed Pipeline CSS Frequency > 100 ft/sample? (4)	Abandoned Pipeline Sampling Frequency >50 ft/sample? (5)	Overexcavation Sampling Frequency >7.5 ft/sample? (6)	SS at Each Overexcavation?									
Phase I	CF-6	A	NFA	NFA	no	no	no	no	41	NA	NA	NA	25	NA	NA	no	--	Request for closure submitted to Water Board.	0	0	0
Phase I	CF-7	A	SS	Crissy Field RAP	yes	yes	no	no	77	NA	10.8	yes	45	NA	NA	no	Additional excavation was conducted by the Army as part of the Crissy Field RAP and additional sampling was conducted by the Trust in the vicinity of the overexcavation. Therefore, the sampling frequency subsequent to the original FDS removal is < 7.5 ft/sample, and the FDS section is adequately characterized.	Request for closure submitted to Water Board.	0	0	0
Phase I	CF-8	A	NFA	NFA	no	no	no	no	75	NA	NA	NA	87	NA	NA	no	The FDS Section is within the saltwater ecological protection zone. No visibly stained soil was encountered and chemical concentrations in CSS were all below cleanup levels. Therefore, the low sampling frequency observed in stockpiled soil is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
Phase I	CF-9	A	NFA	NFA	no	no	no	no	89	NA	NA	NA	16	NA	NA	no	The FDS Section is within the saltwater ecological protection zone.	Request for closure submitted to Water Board.	0	0	0
Phase I	CF-10	A	NFA	NFA	no	no	no	no	78	NA	NA	NA	31	NA	NA	no	The FDS Section is within the saltwater ecological protection zone.	Request for closure submitted to Water Board.	0	0	0
Phase I	CF-11	A	NFA	NFA	no	no	no	no	44	NA	NA	NA	11	NA	NA	no	--	Request for closure submitted to Water Board.	0	0	0
TBD	CF-12	A	Commissary/PX CAP	Commissary/PX CAP	yes	no	no	no	56	NA	NA	NA	31	NA	NA	no	FDS section is located at the Commissary/PX Site. Chemical concentrations in CSS representative of soil remaining in place are above cleanup levels. Site was addressed as part of the CAP.	Remediation was addressed as part of the Commissary/PX CAP. No further action is recommended as part of FDS data gap analysis.	0	0	0
Phase I	MT-1	A	NFA	NFA	no	no	NA	no	109	109	NA	NA	none	yes	no	no	The FDS Section is within the saltwater ecological protection zone. No visibly stained soil was encountered and CSS were all below cleanup levels. Therefore, the low sampling frequency of stockpiled soil, abandoned piping, and removed piping is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
TBD	MT-2	B	CAP	970/971 Mini-CAP, CSS	yes	yes	no	no	21	55	10.7	yes	47	yes	no	yes	Chemical concentrations in CSS representative of soil remaining in place exceed cleanup levels for PAHs at sample location FM02012W02, which is not located at the Building 970/971 Area. Soil samples are >CL within the overexcavation next to Hoffman Street. Additionally, potential groundwater impacts may exist (TPH = 1360 mg/kg at 21.5 ft bgs at sample location FM02009W21 (21.5)) in the vicinity of the overexcavation. Potential soil and groundwater impacts in the vicinity of the overexcavation will be addressed as part of the Building 970/971 Mini-CAP.	Collect one native CSS, at 3.5 ft bgs, at sampling location FM02012W02 and analyze for PAHs.	0	1	0
TBD	MT-3	B	CSS	CSS, SS	no	yes	yes	no	62	65	5.0	yes	31	yes	no	yes	PAH concentrations in CSS representative of soil remaining in place potentially exceed cleanup levels for PAHs in soil sample FM03021W03. Stockpile soil is potentially > CLs (concentrations of TPH in 4 out of 8 stockpile samples was TPH > 62.5 mg/kg by immunoassay). The sampling frequency for abandoned piping was inadequate. However, the abandoned piping is located beneath a portion of Highway 101. This section of freeway is very difficult to access. Additionally, potential groundwater impacts may exist near Building 1299 (TPH < 15,000 mg/kg at 12.5 ft bgs at sample location FM03021W06). Depth to groundwater has been measured at 25 to 30 ft bgs in nearby monitoring well 1213GW101.	Collect one native CSS at 4 ft bgs at soil sampling location MT-3SB05 and analyze for PAHs. Collect seven CSS, at 2 or 4 ft bgs, within overburden along the trenchline at 100 ft/sample of pipeline removed and analyze for TPH and PAHs. To assess the extent of affected soil at sample location MT-3SB06, collect one native CSS at 12.5 ft bgs and two native SS at 17.5 and 22.5 ft bgs and analyze for TPH and PAHs.	10	11	0
TBD	MT-4	B	CSS	CSS	no	no	yes	no	126	NA	6.4	yes	95	NA	NA	no	TPH concentrations in one stockpile soil sample collected at Station 24+00 potentially exceeded cleanup levels (> 62.5 mg/kg) was used as backfill near Station 24+00. IT recommended CSS of overburden along trench near Station 24+00. Additionally, CSS along removed trench and stockpiled soil is inadequate.	Collect six overburden CSS at 2 ft bgs along parallel lengths of removed trench between Stations 23+00 and 26+00 (section most likely to have had stockpiled soil > CL used as backfill) and analyze for TPH.	6	0	0
TBD	MT-5	B	CSS	CSS, SS	no	yes	no	no	85	42	7.1	yes	84	yes	yes	no	PAH concentrations in one CSS (FM05035T02) may potentially exceed cleanup levels (> 5.0 mg/kg). A 140-ft length of pipeline failed pressure testing criteria and had inadequate sampling frequency. Stockpile soil was used as backfill only between Stations 37+00 and 39+00. Overburden sampling frequency is close to the required frequency.	Collect one native CSS at 4.5 ft bgs at sample location MT-5SB01 and analyze for PAHs. Collect one native SS between 6 to 8 ft bgs at the center of the 140-ft length of abandoned pipeline and analyze for TPH and PAHs.	1	2	0

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					CSS Potentially > CL for individual TPH?	CSS Potentially > CL for individual PAHs?	Stockpile CSS Potentially > CL used as Backfill?	LTTD Potentially in Soil > CL?	Removed Pipeline CSS Frequency > 100 ft/sample? (4)	Abandoned Pipeline Sampling Frequency >50 ft/sample? (5)	Overexcavation Sampling Frequency >7.5 ft/sample? (6)	SS at Each Overexcavation?									
TBD	MT-6	B	Mini-CAP	Building 1349 CAP	yes	yes	yes	no	100	NA	4.8	yes	42	NA	NA	no	FDS section is located at the Building 1349 Site. Chemical concentrations in CSS representative of soil remaining in place were found to be above cleanup levels at Station 43 and will be remediated as part of the Building 1349 CAP. TPH concentrations in stockpile soil used to backfill between sampling locations FM06041T01 and FM6042T02 may have exceeded the TPH > 100 mg/kg discharge criteria (TPH > 71 mg/kg). This area was investigated as part of the 1349 CAP and TPH and PAHs concentrations in soil sample 1349SB114/1349SB115 were below cleanup levels (BBL, 2006).	Future remedial action will be conducted as part of the 1349 CAP. No further action is recommended as part of FDS data gap analysis.	0	0	0
TBD	MT-7	B	NFA	Building 1349 CAP	yes	yes	no	no	77	NA	7.3	yes	114	NA	NA	no	Chemical concentrations in CSS representative of soil remaining in place were found to be above cleanup levels. Remediation of affected soil will be conducted as part of the Building 1349 CAP (BBL, 2006).	No further action is recommended as part of FDS data gap analysis.	0	0	0
Phase I	MT-8	B	NFA	NFA	no	no	no	no	110	NA	NA	NA	none	NA	NA	no	No visibly stained soil was encountered and chemical concentrations in CSS were all below cleanup levels. Therefore, the low sampling frequency observed in stockpiled soil and removed piping is not likely an issue.	Request for closure submitted to Water Board.	0	0	0
TBD	MT-9	B	NFA	CSS	no	no	NA	no	82	30	4.8	yes	none	no	no	no	No stockpile samples were collected from 110 cy of stockpiled soil from a FDS section were visibly stained soil was encountered and an excavation was conducted. Pressure testing was not conducted at one 60 ft length of abandoned pipeline, but both ends were sampled and sampling frequency for abandoned piping is adequate.	Collect three CSS from the overburden (approximately 50 cy/sample for stockpiled soil) at 2 ft bgs and analyze for TPH and PAHs.	3	3	0
TBD	MT-10	B	Mini-CAP, CSS	SS	yes	yes	no	no	91	NA	NA	NA	202	NA	NA	no	CSS representative of soil remaining in place potentially exceeds cleanup levels (> 575 mg/kg TPH and > 5 mg/kg PAHs) at soil sample location FM10068T01. Additionally, IT recommended CSS of overburden material due to TPH at 130 mg/kg, which is above discharge criteria (> 100 mg/kg) for stockpile soil. However, this TPH concentration is not > CL for TPH remaining in place. Therefore, no additional sampling is recommended for soil above discharge criteria.	Collect one native SS, at 0.5 ft bgs, at Station 68+70 (Army soil sampling location FM10068T01) and analyze for TPH and PAHs.	1	1	0
TBD	MT-11	B	CSS	CSS	no	no	yes	no	74	6	NA	NA	69	yes	no	no	Total carcinogenic PAH concentrations (< 6.2 mg/kg) potentially exceed cleanup levels in two out of three stockpile soil samples used as backfill. The third stockpile soil sample was not analyzed by the fixed laboratory. Immunoassay results of stockpile soil samples are inconsistent with lab analytical results.	Collect eight overburden CSS at 2 ft bgs at frequency of 100 lf/sample along length of removed piping and analyze for PAHs.	0	8	0
TBD	MT-12	B	NFA	CSS	no	no	yes	no	59	NA	8.0	yes	109	NA	NA	no	Total carcinogenic PAH concentrations (< 6.2 mg/kg) in stockpile soil sample used as backfill may exceed applicable cleanup level of 5.6 mg/kg. Stockpile soil sampling frequency was inadequate. CSS at overexcavation was very close to acceptable frequency.	Collect four CSS at 2 ft bgs from overburden along length of trench between Station 84+00 and 87+00 (100 lf/sample of trench removed) and analyze for PAHs.	0	4	0
TBD	MT-13	B	NFA	CSS	no	no	NA	no	62	19	8.0	yes	none	yes	no	no	No stockpile samples were collected from a FDS section where 74 cy of stockpile soil was used as backfill and visibly stained soil was encountered and an excavation was conducted. Overexcavation confirmation sampling close to required frequency.	Collect two CSS from the overburden (50 cy/sample for stockpiled soil) at 2 ft bgs and analyze for TPH and PAHs.	2	2	0

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					CSS Potentially > CL for individual TPH?	CSS Potentially > CL for individual PAHs?	Stockpile CSS Potentially > CL used as Backfill?	LTTD Potentially in Soil > CL?	Removed Pipeline CSS Frequency > 100 ft/sample? (4)	Abandoned Pipeline Sampling Frequency >50 ft/sample? (5)	Overexcavation Sampling Frequency >7.5 ft/sample? (6)	SS at Each Overexcavation?	Stockpile Sampling Frequency > 50 cy/sample or none? (7)	Adequate Pressure Testing? (8)	Pressure Test Failure? (9)						
TBD	MT-14	B	CAP, Mini-CAP, CSS	CSS, SS Infantry Terrace CAP or Mini-CAP	yes	yes	yes	no	26	40	3.7	no	30	no	yes	no	FDS section is located at Infantry Terrace. Chemical concentrations in CSS representative of soil remaining in place were potentially >CLs for TPH and PAHs at location FM14094L02 (PAHs >5.0 mg/kg and TPH >575 mg/kg) and FM14097L01 (TPH <3,551 mg/kg and PAHs >5.0 mg/kg). Stockpiled soil with PAH concentrations above cleanup levels was used as backfill (PAH = 6.8 mg/kg in stockpile samples FM14095S01 and FM14095S02). Although the overall overexcavation sampling frequency was adequate, only one confirmation soil sample was collected for an excavation 30 feet in length near Building 334. Additional soil sampling by GRC in 2005 found TPH at one shallow soil sample location, at soil sample location FM14SB108(6.5) (TPH-d= 89 mg/kg and TPH-Fo = 230 mg/kg), and TPH directly beneath the lateral piping was not analyzed. Soil at Overexcavation No. 7 was found to have CSS above cleanup levels, near Building 340 and near Building 341, where soil was inaccessible for further excavation. Additional excavation work (45 ft long, 6 ft deep and 8 ft wide) was completed along the western side of the excavation as part of the basement waterproofing of Building 340, and the majority of affected soil was likely removed. No COCs were detected in groundwater samples collected from wells FM14EX07MW101 and FM14EX07MW102, in the vicinity of Overexcavation No. 7. However, soil above cleanup levels is still present in the vicinity of Overexcavation No. 7 and will be remediated as part of a CAP or Mini-CAP conducted by the Trust.	Collect seven overburden CSS at 1.5 to 2 ft bgs along removed pipeline and analyze for TPH and PAHs. Collect one native CSS at 2.5 ft at GRC sample location MT-14SB08. Assess vertical extent of affected soil at sample location MT-14SB12 by collecting one native CSS at 2 ft bgs and one native SS at 7 ft bgs and analyze all for TPH and PAHs.	16	16	0
TBD	MT-15	B	CSS	CSS	no	no	no	no	53	35	4.1	yes	35	yes	yes	no	A 167-ft length of abandoned pipeline failed pressure testing, was grouted, and sampled at both ends. Approximately 75 ft of the abandoned pipe length is located beneath Building 45. However, the remaining portion of the pipeline appears to be accessible and was not sampled. A 24-ft section of pipeline located beneath a tree failed pressure testing, and was not sampled at both ends. Additionally, IT recommended CSS of overburden material due to TPH exceeding the 100 mg/kg discharge criterion (TPH = 280 mg/kg). However, TPH concentrations are not above applicable cleanup levels and no sampling is recommended in the overburden.	Collect two native CSS at 3.5 ft bgs adjacent to Building 45, for a sampling frequency of 1 sample per 50 ft of abandoned piping. Collect one native CSS at 2.5 ft bgs at the unsampled end of the 24 ft length of piping adjacent to a tree. All samples should be analyzed for TPH and PAHs.	3	3	0
TBD	MT-16	B	CSS	CSS	no	no	yes	no	35	59	NA	NA	20	no	no	no	TPH and PAH concentrations (> 62.5 mg/kg TPH and > 1 mg/kg PAHs) in a portion of stockpiled soil was likely used as trench backfill. Abandoned lengths of lateral piping adjacent to Buildings 11 through 16 were not pressure tested but were sampled at a frequency very close to the acceptable frequency.	Collect three overburden CSS at 1.5 ft bgs between Army samples FM16109L03 and FM16111L01, which likely received stockpiled soil from Army soil samples FM16111S01 and FM16111S02, and analyze for TPH and PAHs (approximately 100 lf/sample).	3	3	0
TBD	MT-17	B	CSS	CSS	no	no	yes	no	33	23	8.0	yes	190	no	no	no	An inadequate number of stockpile soil samples were collected and chemical concentrations in one stockpile soil samples potentially exceeded cleanup levels (TPH > 100 mg/kg). Additionally, pressure testing was not conducted for a 75 ft length of abandoned piping. CSS of the overexcavation was very close to acceptable frequency. This abandoned pipeline was deemed inaccessible due to the presence of trees and utility lines.	Collect nine overburden CSS at 1.5 to 2 ft bgs at approximately 100 lf/sample and analyze for TPH. Accessibility of the 75 ft length of abandoned piping was reassessed, and deemed accessible for the purposes of additional sampling. Collect one CSS, at 2.5 ft bgs, along abandoned piping length and analyze for TPH and PAHs.	10	1	0

Table 2
Evaluation of Data Gaps in Fuel Distribution System Removal Program
 Presidio of San Francisco, California

Abbreviations:

- number
 > CL - above cleanup levels
 Army - U.S. Army Corps of Engineers
 BTEX - benzene, toluene, ethylbenzene, xylenes
 CAP - Corrective Action Plan
 Commissary/PX - Commissary Post-Exchange
 CSS - Confirmation Soil Sample
 cy - cubic yard
 EKI - Erler & Kalinowski, Inc.
 FDS - fuel distribution system
 ft - feet
 GGBHTD - Golden Gate Bridge Highway and Transportation District
 IT - International Technology Corporation
 lf - linear feet
 LTTD - low temperature thermal desorption
 NA - not applicable
 NFA - no further action
 PAHs - polycyclic aromatic hydrocarbons
 RAP - Remedial Action Plan
 SS - soil sample
 TBD - closure request phase is to be determined after implementation of FSP or other activities at CAP or Mini-CAP sites.
 TPH - total petroleum hydrocarbons

Legend

Does not meet selected criteria

Notes:

- (1) Additional soil sampling is required for all FDS sections which fail any portion of Level I Decision Criteria (except at Section BR13-2, which had additional sampling performed in the vicinity as part of the 748/750 Mini-CAP). Applicable cleanup levels for each FDS Section are included in Appendix F.
- (2) Additional soil sampling may be required for FDS sections which fail any portion of Level II Decision Criteria.
- (3) An assessment of soil concentration as a function of depth or groundwater sampling is required for FDS sections which fail Level III Decision Criteria.
- (4) Former Water Board Order 96-070 required a sampling frequency of >100 lf/sample of trench, including one confirmation soil each end of removed pipeline, one confirmation soil sample at each change in direction, and one confirmation sample at each intersection with lateral piping. CSS collected at a sampling frequency > 100 lf/sample of pipeline removed are highlighted in gray.
- (5) Former Water Board Order 96-070 required a sampling frequency of 50 lf/sample of accessible abandoned piping. If the piping was inaccessible for sampling, the Army generally collected samples at both ends of abandoned piping, except for short laterals. CSS collected at a sampling frequency > 50 cy/sample are highlighted in gray.
- (6) The Army planned to sample overexcavation lengths at a frequency of > 7.5 lf/sample. Highlighted fields indicate sampling frequency of > 7.5 lf/sample.
- (7) The Army recommended confirmation soil sampling at frequency of 50 cy/sample. FDS sections where stockpiled soil was not sampled are indicated as NA. FDS sections where > 50 cy of stockpiled soil were generated and no samples were collected or FDS Sections where the minimum sampling frequency of 50 cy/sample was not met are highlighted in gray.
- (8) Prior to November 1996, the Army performed pressure testing on abandoned pipeline > 50 lf and collected samples at a frequency of 50 lf/sample of abandoned piping. Subsequently, this provision was amended, and pressure testing was recommended on abandoned FDS pipeline > 20 lf, with soil samples collected from exposed ends of abandoned piping. Grouting of abandoned FDS pipeline was also recommended. FDS sections with abandoned piping >50 lf were pressure tested. Sections where pressure testing met these criteria are indicated as "yes", otherwise "no" is indicated and the cell is highlighted in gray.
- (9) FDS sections where abandoned piping > 50 lf failed pressure testing is indicated as "yes" and highlighted in gray, otherwise "no" is indicated.
- (10) Potential groundwater impacts are based on the presence/absence of significantly affected soil at depth (e.g., > 10 ft bgs), where the reported groundwater at the Site is generally within 15 ft of the affected soil.
- (11) For purposes of this investigation, "overburden" refers to the soil that was excavated by the Army as part of the FDS removal and used as backfill. "Native" soil is soil that was not excavated by the Army as part of the FDS removal and remediation activities.

References:

- Blasland, Bouck & Lee, Inc. ("BBL"), 2006. *Final Corrective Action Plan, Building 1349 Study Area, Presidio of San Francisco, California*. February.
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 Treadwell & Rollo, Inc. ("T&R"), 2005. *Final Corrective Action Plan< Commissary/PX Study Area, Presidio of San Francisco, California*. December.

Appendix B

Field Methods

APPENDIX B

FIELD METHODS AND PROCEDURES FOR DRILLING AND SAMPLING ALONG THE FORMER FUEL DISTRIBUTION SYSTEM

**The Presidio Trust
Presidio of San Francisco
San Francisco, California**

B. DRILLING AND SAMPLING METHODS

The field methods and procedures described herein are descriptions of environmental sampling protocols employed by EKI and/or its subcontractors during the Fuel Distribution System (“FDS”) field investigation performed for the Presidio Trust from August to October 2007. The methods described below are for environmental characterization purposes only.

B.1 Field Work Preparation

Between 6 August and 8 August 2007, EKI marked approximately 130 sample locations in 29 sections of the FDS in the Presidio of California. Locations on asphalt or concrete were marked with white paint and locations on lawns and in the forest were marked with orange flags.

After marking each of the 29 FDS sections in white paint, on 20 September 2007, EKI contacted Underground Services Alert (“USA”) in order to notify the utilities of sampling activities in the 29 FDS sections. Similar to other Trust projects, activities associated with utility clearance (including utility locating), permitting or other regulatory requirements, and coordinating for the Presidio-specific Trust reviews and compliance activities (e.g., N²) were performed and coordinated by the Trust. Samples with utility conflicts were either moved laterally along the FDS line or to within two feet of the FDS line, depending on field conditions.

B.2 Drilling Methods

Between 24 September and 15 October 2007, 114 soil boreholes were drilled by Gregg Drilling and Testing, Inc. (“Gregg”) to a depth between 1.5 feet below ground surface (“ft bgs”) and 23 ft bgs using either a hand auger or a Rhino limited-access, track-mounted drill rig (“Rhino”). Soil boreholes were continuously sampled using either a 2-inch outside diameter hand auger or a 1.5-inch outside diameter split spoon for the direct-

push Rhino. Generally, boreholes deeper than 10 ft bgs were drilled using the Rhino rig and boreholes with a total depth less than 10 ft bgs were advanced using a hand auger.

An EKI geologist, under the supervision of a California-licensed Professional Geologist, was present during all drilling activities to document encountered soils, perform field screening with an organic vapor meter (“OVM”), and prepare selected soil samples for subsequent physical or chemical analysis at the designated laboratory. The soil boreholes were stratigraphically logged using the Unified Soil Classification System. Soil color was described according to the Munsell Soil Color system. EKI field staff implemented the drilling activities in accordance with its Health and Safety Plan for the project. Borehole logs can be found in Appendix H.

B.3 Soil Sampling Methods

In the 2007 investigation, EKI collected 14 soil samples from 11 soil boreholes along 2 FDS sections in Area A as shown on Figures 2 and 3. Samples were collected in accordance with the field methods and procedures as specified in Standard Operating Procedure (“SOP”) 001, SOP 009, SOP 013, SOP 014, and SOP 015 of the QAPP.

Soil samples were collected using a 2-inch hand auger, a 2-inch butyrate liner, or a 1.5-inch split spoon, depending on the method of drilling for each borehole. Generally, soil samples were collected from depths between 1.5 to 3 ft bgs at overburden sampling locations, from 2 to 10.5 ft bgs in native soil sampling locations where a vertical chemical profile was not recommended, and between 9.5 to 23 ft bgs in native soil sampling locations where a vertical chemical profile was recommended. The depths and corresponding laboratory analyses for proposed soil samples are summarized in Table 3 of the main report. Soil samples were analyzed for the specific chemicals of concern, which may include total petroleum hydrocarbons as diesel (“TPHd”) and fuel oil (“TPHfo”) and polycyclic aromatic hydrocarbons (“PAHs”), depending on the FDS section and identified data gaps. The results of the soil sampling can be found in Tables 4, and 5 of the field sampling report.

Soil samples collected for TPHd, TPHfo, and PAHs were placed into 8-oz glass jars, labeled with a unique identification name and time, and then placed on ice in a cooler for temporary storage while in transit to the laboratory for chemical analysis. Chain-of-custody records were initiated to document sample handling and delivery to the analytical laboratory.

B.4 Investigation Derived Waste

Wastes generated from soil sampling activities included soil from the sampling of shallow soil borings and water from decontamination of soil sampling equipment. Soil and water wastes were temporarily contained in 5-gallon plastic buckets during completion of field activities each day and then transferred to DOT-approved 55-gallon

drums. The 55-gallon drums were temporarily stored onsite as directed by the Trust. Waste and soil containers were properly labeled as to their contents and dates of generation, and were disposed off-Site by the Trust in accordance with applicable state and federal laws.

B.5 Surveying

Soil sample locations for the first investigation were surveyed by PLS Surveys between 4 October and 15 October 2007. The surveying was done in accordance with GeoTracker specifications as well as SOP 013. The horizontal coordinates were reported in NAD 83 and the vertical coordinates were reported in both the North American Vertical Datum 88 as well as the 1907 Presidio Lower Low Water vertical datum. Survey data are provided in Appendix E.

Appendix C
Laboratory Analytical Results for Soil Samples
(included as CD)

Appendix D
Data Validation Report



DataVal, Inc.

RECEIVED

DEC 28 2007

ERLER & KALINOWSKI, INC.

TO: John DeWitt, Erler & Kalinowski, Inc.

December 21, 2007

FROM: Donna Breaux, DataVal, Inc. Erler & Kalinowski Project No. A70004.16

DB 12/21/07

**DATA VALIDATION SUMMARY REPORT FOR THE FUEL DISTRIBUTION SYSTEM
FIELD SAMPLING EVENT, THE PRESIDIO OF SAN FRANCISCO, CA**

LABORATORY: Curtis & Tompkins, Ltd., Berkeley, CA

SAMPLING DATES: September 24 through October 15, 2007

Data validation of Levels III and IV laboratory data packages was performed according to the project-specific guidelines. These guidelines were outlined in the Presidio-wide Quality Assurance Project Plan, Sampling and Analysis Plan, April, 2001; and the U. S. Environmental Protection Agency Contract Laboratory Program National Functional Guidelines for Organic Data Review, October, 1999.

The data were reviewed for holding times, surrogate recoveries, laboratory blanks, laboratory control samples, matrix spikes and matrix spike duplicates, GC/MS tunes, initial calibrations, continuing calibration verification standards, internal standards, field QC samples and compound identification and quantitation.

The following paragraphs highlight the essential findings of the data validation effort:

I. Volatile Organic Compounds (VOCs) by GC/MS (8260B)

Overall, the data are usable as reported. Qualification was not required.

A. Reporting Limits

The laboratory reporting limits for benzene, ethylbenzene, toluene and xylenes in soil matrix samples met the project-required reporting limits. It should be noted that the reporting limits for all soils were raised due to dry weight correction.

B. Holding Times

Technical holding time criteria were met for all project samples.

C. Surrogate Recoveries

Surrogate spike recoveries met QC acceptance criteria for all project samples.

D. Blanks

Target analytes were not observed in any laboratory method blanks associated with the project samples.



E. Laboratory Control Samples

All QC criteria were met for the laboratory control samples associated with the project samples.

F. Matrix Spike/Matrix Spike Duplicate

All QC criteria were met for the matrix spikes and matrix spike duplicates associated with the project samples.

G. GC/MS Tunes

All QC criteria were met for the GC/MS tunes associated with the project samples.

H. Initial Calibration

Initial calibration criteria were met for all calibration standards associated with the project samples.

I. Continuing Calibration

Continuing calibration criteria were met for all continuing calibration standards associated with the project samples.

J. Internal Standards

Internal standard areas and retention times met QC acceptance criteria for all project samples.

K. Compound Identification and Quantitation

The sample analyzed for BETX in laboratory sample delivery group 198002 received full (Level IV) data validation. This included re-calculation of surrogate values, GC/MS tunes, initial and continuing calibrations and internal standard areas; in addition to re-calculation of all reported results for BETX in this sample. The reported results for BETX in this sample were verified as correctly reported by the laboratory.

II. **Polynuclear Aromatic Hydrocarbons (PAHs) by GC/MS (8270-SIM)**

Overall, the data are usable as reported with any added qualifiers. Qualifications were required for the reasons noted in Sections I and J.

A. Reporting Limits

The laboratory reporting limits for PAHs in soil matrix samples met the project-required reporting limits, with the following exceptions:

1. Many samples were analyzed at dilutions due to the dark, viscous nature of the sample extracts. The reporting limits were raised by the dilution factors.
2. Samples BR1-2SB01(6.5) (197830-002) and BR1-2SB03(6.5) (197830-005) were analyzed at dilutions due to the presence of non-target compounds. The reporting limits were raised by the dilution factors.



3. The sample extract would not concentrate to the normal volume for sample MT-13SB02(2.0) (197916-008); additional dilution was required at the instrument due to the dark, viscous nature of the sample extract. The reporting limits were raised by the dilution factor.
4. It should be noted that the reporting limits for all soils were raised due to dry weight correction.

B. Holding Times

Technical holding time criteria were met for all project samples.

C. Surrogate Recoveries

Surrogate spike recoveries met QC acceptance criteria for all project samples, with the following exceptions:

1. Samples which required dilutions of five-fold or greater and had failing surrogate recoveries did not require qualification, and were not noted in this report.
2. Samples with less than two failing base-neutral surrogate recoveries did not require qualification, and were not noted in this report.

D. Blanks

Target analytes were not observed in any laboratory method blanks associated with the project samples, with the following exception:

1. Method blank QC411433 had a detected level of naphthalene at 1.2 ug/kg. The associated project samples were non-detect for naphthalene, and qualification was not required.

E. Laboratory Control Samples

All QC criteria were met for the laboratory control samples associated with the project samples.

F. Matrix Spike/Matrix Spike Duplicate

All QC criteria were met for the matrix spikes and matrix spike duplicates associated with the project samples, with the following exceptions:

1. The percent recoveries for acenaphthene were outside the 31%-137% project acceptance criteria in QC samples MT-3SB01(2.5) (197978-001) MS/MSD. The sample was diluted five-fold for acenaphthene analysis and qualification was not required. (QC Batch 130327)
2. The percent recovery for acenaphthene was outside the 31%-137% project acceptance criteria and the percent recovery for pyrene was outside the 35%-142% project acceptance criteria in QC sample 198257-006 MSD. The parent sample was from a site unrelated to the project site, and qualification of project samples was not required. (QC Batch 130758)

G. GC/MS Tunes

All QC criteria were met for the GC/MS tunes associated with the project samples.



H. Initial Calibration

Initial calibration criteria were met for all calibration standards associated with the project samples.

I. Continuing Calibration

Continuing calibration criteria were met for all continuing calibration standards associated with the project samples, with the following exceptions:

1. Qualification was not required for samples with non-detect results that were associated with high-failing continuing calibration verification (CCV) standards. Those failures were not noted in this report.
2. The 10/4/07 at 20:05 CCV standard analyzed on instrument MSBNA07 had benzo(b)fluoranthene with a percent difference (%D) greater than the +/-25%D acceptance criteria at 26%. The detected results for benzo(b)fluoranthene in the associated project samples were qualified as estimated with a high bias (J+).
3. The 10/8/07 at 9:30 CCV standard analyzed on instrument MSBNA02 had benzo(g,h,i)perylene with a %D greater than the +/-25%D acceptance criteria at 27%. The detected results for benzo(g,h,i)perylene in the associated project samples were qualified as estimated with a high bias (J+).
4. The 10/9/07 at 8:51 CCV standard analyzed on instrument MSBNA08 had indeno(1,2,3-cd)pyrene and dibenz(a,h)anthracene with %Ds less than the +/-25%D acceptance criteria at -30% and -35%, respectively. The results for indeno(1,2,3-cd)pyrene and dibenz(a,h)anthracene in the associated project sample were qualified as estimated with a low bias (J-/UJ).
5. The 10/10/07 at 12:51 CCV standard analyzed on instrument MSBNA02 had benzo(g,h,i)perylene with a %D greater than the +/-25%D acceptance criteria at 44%. The detected results for benzo(g,h,i)perylene in the associated project samples were qualified as estimated with a high bias (J+).
6. The 10/22/07 at 9:29 CCV standard analyzed on instrument MSBNA03 had benzo(b)fluoranthene with a %D greater than the +/-25%D acceptance criteria at 28%. The detected results for benzo(b)fluoranthene in the associated project samples were qualified as estimated with a high bias (J+).
7. The 10/23/07 at 7:33 CCV standard analyzed on instrument MSBNA08 had indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene and benzo(g,h,i)perylene with %Ds less than the +/-25%D acceptance criteria at -29%, -29% and -30%, respectively. The detected results for indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene and benzo(g,h,i)perylene in the associated project sample were qualified as estimated with a low bias (J-).

See Table 2 of this report for a summary of qualifications due to continuing calibration verification percent difference failures.

**J. Internal Standards**

Internal standard areas and retention times met QC acceptance criteria for all project samples, with the following exceptions:

1. Samples with non-detected results and high-failing internal standard areas did not require qualification, and were not noted in this report.
2. Four project samples had internal standard areas outside the -50% to +100% acceptance criteria. The results for the compounds associated with the outlying internal standards were qualified as estimated (J/UJ). The following table lists the samples with failing internal standards.

Project Sample ID	Laboratory Sample ID	Internal Standard	Area Counts	Area Acceptance Range
MT-13SB02(2.0)	197916-008	Perylene-d12	66775	71768-287070
MT-16SB01(1.5)	197916-009	Perylene-d12	63605	71768-287070
MT-16SB02(1.5)	197916-010	Perylene-d12	68467	71768-287070
DUP-1-100507	198157-003	Phenanthrene-d10	142038	35118-140472

See Table 2 of this report for a summary of qualifications due to internal standard area count failures.

K. Compound Identification and Quantitation

All samples analyzed for PAHs in laboratory sample delivery groups 197831, 197863, 197977, 198002 and 198300 received full (Level IV) data validation. This included re-calculation of surrogate values, GC/MS tunes, initial and continuing calibrations and internal standard areas; in addition to re-calculation of all reported results for PAHs in these samples. The reported results for PAHs in these samples were verified as correctly reported by the laboratory.

III. Total Petroleum Hydrocarbons (TPH) – Diesel/Fuel Oil Range (8015B)

Overall, the data are usable as reported with any added qualifiers. Qualification was required for the reason noted in Section F.

A. Reporting Limits

The laboratory reporting limits for TPH-diesel and TPH-fuel oil in soil matrix samples met the project-required reporting limits, with the following exceptions:

1. Samples MT-16SB01(1.5) (197916-009), BR10-1SB01(2.0) (197939-011), BR6-1SB03(1.5) (197978-006), MT-13SB01(2.0) (198002-002) and MT-2SB07(1.0) (198445-005) were analyzed at five-fold dilutions; samples BR10-1SB02(3.0) (197939-012), MT-9SB02(2.0) (197998-003) and MT-2SB03(1.0) (198445-002) were analyzed at ten-fold dilutions; and samples MT-13SB02(2.0) (197916-008) and MT-3SB08(2.0) (197978-008) were analyzed at twenty-fold dilutions



due to the dark, viscous nature of the sample extracts. The reporting limits were raised by the dilution factors.

2. Sample BR1-2SB03(6.5) (197830-005) was analyzed at a ten-fold dilution due to the presence of non-target compounds. The reporting limits were raised by the dilution factor.
3. It should be noted that the reporting limits for all soils were raised due to dry weight correction.

B. Holding Times

Technical holding time criteria were met for all project samples.

C. Surrogate Recoveries

Surrogate spike recoveries met QC acceptance criteria for all project samples, with the following exceptions:

1. Samples with non-detected results and high-failing surrogate recoveries did not require qualification, and were not noted in this report.
2. Samples which required dilutions of five-fold or greater and had failing surrogate recoveries did not require qualification, and were not noted in this report.

D. Blanks

Target analytes were not observed in any laboratory method blanks associated with the project samples.

E. Laboratory Control Samples

All QC criteria were met for the laboratory control samples associated with the project samples.

F. Matrix Spike/Matrix Spike Duplicate

All QC criteria were met for the matrix spikes and matrix spike duplicates associated with the project samples, with the following exceptions:

1. The percent recovery for TPH-diesel was outside the 65%-135% project acceptance criteria in QC sample BR5-2SB07(1.5) (197830-021) MS at 148%. The detected result for TPH-diesel in the parent sample was qualified as estimated with a high bias (J+). (QC Batch 130180)
2. The relative percent difference (RPD) for TPH-diesel was outside the 35% project acceptance criteria in QC samples BR5-3SB04(2.5) (197862-013) MS/MSD at 45%. The non-detect result for TPH-diesel in the parent sample was qualified as estimated (UJ). (QC Batch 130218)
3. The percent recovery for TPH-diesel was outside the 65%-135% project acceptance criteria in QC sample 198011-001 MS. The parent sample was from a site unrelated to the project site, and qualification of project samples was not required. (QC Batch 130254)
4. The percent recovery for TPH-diesel was outside the 65%-135% project acceptance criteria in QC sample 198322-002 MS. The parent sample was from a site unrelated to the project site, and qualification of project samples was not required. (QC Batch 130661)



5. The percent recovery for TPH-diesel was outside the 65%-135% project acceptance criteria in QC sample MT-2SB07(1.0) (198445-005) MSD.

The sample was diluted five-fold for TPH-diesel analysis and qualification was not required. (QC Batch 131063)

See Table 2 of this report for a summary of qualifications due to matrix spike percent recovery and relative percent difference failures.

G. Initial Calibration

Initial calibration criteria were met for all calibration standards associated with the project samples.

H. Continuing Calibration

Continuing calibration criteria were met for all continuing calibration standards associated with the project samples.

I. Compound Identification and Quantitation

All samples analyzed for TPH-diesel and TPH-fuel oil in laboratory sample delivery groups 197831, 197863, 197937, 197977, 198002 and 198300 received full (Level IV) data validation. This included re-calculation of surrogate values and initial and continuing calibrations; in addition to re-calculation of all reported results for TPH-diesel and TPH-fuel oil in these samples. The reported results for TPH-diesel and TPH-fuel oil in these samples were verified as correctly reported by the laboratory.

FIELD DUPLICATES

Field duplicate precision was evaluated by calculating the relative percent difference (RPD) between detected results in the original sample and its associated duplicate. The control limit used for field duplicates was an RPD less than or equal to 50 percent, or the absolute difference of the two results must be less than twice the reporting limit for those analytes that were at or near the detection limit. Fourteen samples were collected in duplicate for the FDS-FSP sampling event.

Project Sample Primary ID	Laboratory Sample ID	Project Sample Duplicate ID	Laboratory Sample ID
BR1-2SB04(6.5)	197830-007	DUP-3-092407	197830-011
BR1-1SB01(2.0)	197830-015	DUP-1-092407	197830-012
BR5-2SB06(2.5)	197831-003	DUP2-092407	197831-004
BR3-1SB02(10.0)	197862-005	DUP-2-092507	197862-006
BR6-1SB01(1.5)	197862-020	DUP-1-092507	197862-021
MT-17SB02(2.0)	197939-014	DUP-1-092707	197939-015
BR7-1SB05(1.5)	197939-024	DUP-2-092707	197937-002
MT-3SB04(2.0)	197978-003	DUP-1-092807	197978-005
MT-15SB02(3.5)	197978-010	DUP-3-092807	197978-011
BR7-2SB02(1.5)	197978-018	DUP-2-092807	197978-019
BR10-1SB06(2.0)	197998-007	DUP-3-100107	197998-006
MT-9SB03(2.0)	198002-001	DUP-1-100107	197998-001
MT-13SB01(2.0)	198002-002	DUP-2-100107	197998-004
MT-11SB07(2.0)	198157-005	DUP-1-100507	198157-003



The attached Table 3 summarizes the field duplicate sample results. The detected results of the original samples and the associated duplicate samples were compared and the calculated RPDs reported. All RPDs met the 50 percent precision control limit requirement, with the following exceptions:

1. In field duplicates BR1-1SB01(2.0) and DUP-1-092407, the relative percent difference (RPD) between the detected results failed the 50% acceptance criteria for TPH-fuel oil at 59%.
2. In field duplicates BR5-2SB06(2.5) and DUP2-092407, the RPD between the detected results failed the 50% acceptance criteria for TPH-fuel oil at 52%.
3. In field duplicates MT-17SB02(2.0) and DUP-1-092707, the RPD between the detected results failed the 50% acceptance criteria for TPH-fuel oil at -137%.
4. In field duplicates MT-3SB04(2.0) and DUP-1-092807, the RPD between the detected results failed the 50% acceptance criteria for benzo(b)fluoranthene at -73%.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results in the field duplicate pairs listed above may be due to the sample matrix, sampling or laboratory technique, or method defects. With the exceptions noted above, the results between the field duplicate pairs matched well. Since the effect on the quality of the data is not known, data is not qualified for field duplicate failure.

SUMMARY

The attached Table 1 lists the samples and analyses included in the data validation effort. This table also designates which samples/analyses received Level IV data validation. The attached Table 2 summarizes the data qualifications required for the project samples for each test method included in the data packages.

USABILITY

The quality control criteria were reviewed, and other than those discussed above, all criteria were met and the data are considered acceptable. Estimated sample results (J/UJ) are usable only for limited purposes. Based upon the cursory and full data validation, all other results are considered valid and usable for all purposes.

VALIDATION QUALIFIERS IDENTIFICATION

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October, 1999.

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. A *minus sign (-)* indicates the numerical value has a low bias. A *plus sign (+)* indicates the numerical value has a high bias.



- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Table 1
Sample Summary
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Site Sample ID	Laboratory Sample ID	Date Sampled	Analyses	Sample Type
BR1-2SB01(3.0)	197830-001	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR1-2SB01(6.5)	197830-002	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR1-2SB02(3.0)	197830-003	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR1-2SB02(6.5)	197830-004	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR1-2SB03(6.5)	197830-005	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR1-2SB04(3.0)	197830-006	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR1-2SB04(6.5)	197830-007	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil (1)
BR1-2SB05(9.0)	197830-009	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR1-2SB05(6.5)	197830-010	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
DUP-3-092407	197830-011	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	FD (1)
DUP-1-092407	197830-012	24-Sep-07	TPH-Diesel//FO (8015B)	FD (2)
MT-4SB03(2.0)	197830-013	24-Sep-07	TPH-Diesel//FO (8015B)	Soil
BR5-2SB01(2.5)	197830-014	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR1-1SB01(2.0)	197830-015	24-Sep-07	TPH-Diesel//FO (8015B)	Soil (2)
BR1-1SB02(4.5)	197830-016	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-4SB04(2.0)	197830-017	24-Sep-07	TPH-Diesel//FO (8015B)	Soil
MT-5SB01(4.5)	197830-018	24-Sep-07	PAHs (8270-SIM)	Soil
BR5-2SB05(2.5)	197830-019	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-4SB05(2.0)	197830-020	24-Sep-07	TPH-Diesel//FO (8015B)	Soil
BR5-2SB07(1.5)	197830-021	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR12-1SB01(2.0)	197830-022	24-Sep-07	TPH-Diesel//FO (8015B)	Soil
BR12-1SB03(5.5)	197830-023	24-Sep-07	TPH-Diesel//FO (8015B)	Soil
MT-4SB06(2.0)	197830-024	24-Sep-07	TPH-Diesel//FO (8015B)	Soil
BR1-2SB06(6.5)	197831-001	24-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-4SB02(2)	197831-002	24-Sep-07	TPH-Diesel//FO (8015B)	Soil
BR5-2SB06(2.5)	197831-003	24-Sep-07	TPH-Diesel//FO (8015B)	Soil (3)

Table 1
Sample Summary
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Site Sample ID	Laboratory Sample ID	Date Sampled	Analyses	Sample Type
DUP2-092407	197831-004	24-Sep-07	TPH-Diesel/FO (8015B)	FD (3)
BR3-1SB01(3.0)	197862-001	25-Sep-07	PAHs (8270-SIM)	Soil
BR3-1SB01(6.0)	197862-002	25-Sep-07	PAHs (8270-SIM)	Soil
BR3-1SB02(5.0)	197862-004	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR3-1SB02(10.0)	197862-005	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil (4)
DUP-2-092507	197862-006	25-Sep-07	PAHs (8270-SIM)	FD (4)
BR3-1SB03(5.5)	197862-008	25-Sep-07	PAHs (8270-SIM)	Soil
BR3-1SB03(10.0)	197862-009	25-Sep-07	PAHs (8270-SIM)	Soil
BR6-1SB02(11.5)	197862-011	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR5-3SB03(2.5)	197862-012	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR5-3SB04(2.5)	197862-013	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-12SB03(2.0)	197862-014	25-Sep-07	PAHs (8270-SIM)	Soil
MT-15SB01(2.5)	197862-015	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR5-3SB01(2.5)	197862-016	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR5-3SB02(2.5)	197862-017	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-4SB01(2.0)	197862-018	25-Sep-07	TPH-Diesel/FO (8015B)	Soil
MT-5SB02(9.5)	197862-019	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR6-1SB01(11.5)	197862-020	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil (5)
DUP-1-092507	197862-021	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	FD (5)
MT-12SB04(2.0)	197863-001	25-Sep-07	PAHs (8270-SIM)	Soil
MT-3SB06(12.5)	197863-002	25-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR9-1SB01(5.5)	197916-001	26-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR10-1SB03(3.0)	197916-002	26-Sep-07	TPH-Diesel/FO (8015B)	Soil
BR9-1SB02(5.0)	197916-003	26-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR10-3SB02(1.5)	197916-004	26-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR9-1SB03(4.5)	197916-005	26-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil

Table 1
Sample Summary
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Site Sample ID	Laboratory Sample ID	Date Sampled	Analyses	Sample Type
BR13-1SB02(2.0)	197916-006	26-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-16SB03(1.5)	197916-007	26-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-13SB02(2.0)	197916-008	26-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-16SB01(1.5)	197916-009	26-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-16SB02(1.5)	197916-010	26-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR3-2SB01(9.5)	197916-011	26-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR6-3SB01(10.0)	197916-014	26-Sep-07	TPH-Diesel//FO (8015B)	Soil
BR6-3SB02(2.5)	197916-017	26-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR6-3SB03(2.5)	197916-018	26-Sep-07	TPH-Diesel//FO (8015B)	Soil
MT-17SB07(2.0)	197937-001	27-Sep-07	TPH-Diesel//FO (8015B)	Soil
DUP-2-092707	197937-002	27-Sep-07	TPH-Diesel//FO (8015B)	FD (6)*
BR6-3SB04(12.0)	197937-003	26-Sep-07	TPH-Diesel//FO (8015B)	Soil
BR6-3SB04(17.0)	197937-004	26-Sep-07	TPH-Diesel//FO (8015B)	Soil
MT-2SB01(2.0)	197939-001	27-Sep-07	PAHs (8270-SIM)	Soil
MT-2SB02(2.0)	197939-002	27-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-2SB04(2.0)	197939-003	27-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-2SB05(2.0)	197939-004	27-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-2SB06(2.0)	197939-005	27-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR1-1SB03(2.0)	197939-006	27-Sep-07	TPH-Diesel//FO (8015B)	Soil
BR10-1SB01(2.0)	197939-011	27-Sep-07	BETX (8260B), PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR10-1SB02(3.0)	197939-012	27-Sep-07	TPH-Diesel//FO (8015B)	Soil
MT-17SB01(2.0)	197939-013	27-Sep-07	TPH-Diesel//FO (8015B)	Soil
MT-17SB02(2.0)	197939-014	27-Sep-07	TPH-Diesel//FO (8015B)	Soil (7)
DUP-1-092707	197939-015	27-Sep-07	TPH-Diesel//FO (8015B)	FD (7)
MT-17SB03(3.5)	197939-017	27-Sep-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-17SB04(1.5)	197939-018	27-Sep-07	TPH-Diesel//FO (8015B)	Soil

Table 1
Sample Summary
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Site Sample ID	Laboratory Sample ID	Date Sampled	Analyses	Sample Type
MT-17SB05(2.0)	197939-019	27-Sep-07	TPH-Diesel/FO (8015B)	Soil
MT-17SB06(2.0)	197939-020	27-Sep-07	TPH-Diesel/FO (8015B)	Soil
MT-17SB08(2.0)	197939-021	27-Sep-07	TPH-Diesel/FO (8015B)	Soil
MT-17SB09(2.0)	197939-022	27-Sep-07	TPH-Diesel/FO (8015B)	Soil
MT-17SB10(2.0)	197939-023	27-Sep-07	TPH-Diesel/FO (8015B)	Soil
MT-15SB03(3.5)	197977-001	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-3SB09(2.0)	197977-002	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-3SB01(2.5)	197978-001	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-3SB05(4.0)	197978-002	28-Sep-07	PAHs (8270-SIM)	Soil
MT-3SB04(2.0)	197978-003	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil (8)
MT-3SB03(2.0)	197978-004	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
DUP-1-092807	197978-005	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	FD (8)
BR6-1SB03(1.5)	197978-006	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-3SB02(2.5)	197978-007	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-3SB08(2.0)	197978-008	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-3SB07(2.0)	197978-009	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-15SB02(3.5)	197978-010	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil (9)
DUP-3-092807	197978-011	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	FD (9)
BR7-1SB01(1.5)	197978-013	28-Sep-07	PAHs (8270-SIM)	Soil
BR7-1SB02(1.5)	197978-014	28-Sep-07	PAHs (8270-SIM)	Soil
BR7-2SB02(1.5)	197978-018	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil (10)
DUP-2-092807	197978-019	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	FD (10)
BR5-2SB03(2.5)	197978-020	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR5-2SB04(3.0)	197978-022	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR5-2SB02(1.0)	197978-023	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR5-2SB08(1.5)	197978-024	28-Sep-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil

Table 1
Sample Summary
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Site Sample ID	Laboratory Sample ID	Date Sampled	Analyses	Sample Type
BR13-1SB01(2.0)	197978-025	28-Sep-07	TPH-Diesel/FO (8015B)	Soil
DUP-1-100107	197998-001	1-Oct-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	FD (11)
MT-9SB01(2.0)	197998-002	1-Oct-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-9SB02(2.0)	197998-003	1-Oct-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
DUP-2-100107	197998-004	1-Oct-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	FD (12)
BR10-1SB07(2.0)	197998-005	1-Oct-07	BETX (8260B), PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
DUP-3-100107	197998-006	1-Oct-07	BETX (8260B), PAHs (8270-SIM), TPH-Diesel/FO (8015B)	FD (13)
BR10-1SB06(2.0)	197998-007	1-Oct-07	BETX (8260B), PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil (13)
MT-9SB03(2.0)	198002-001	1-Oct-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil (11)
MT-13SB01(2.0)	198002-002	1-Oct-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil (12)
BR10-1SB05(2.0)	198002-003	1-Oct-07	BETX (8260B), PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
BR13-1SB03(5.0)	198002-004	1-Oct-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-11SB06(2.0)	198157-001	5-Oct-07	PAHs (8270-SIM)	Soil
MT-11SB03(2.0)	198157-002	5-Oct-07	PAHs (8270-SIM)	Soil
DUP-1-100507	198157-003	5-Oct-07	PAHs (8270-SIM)	FD (14)
MT-11SB04(2.0)	198157-004	5-Oct-07	PAHs (8270-SIM)	Soil
MT-11SB07(2.0)	198157-005	5-Oct-07	PAHs (8270-SIM)	Soil (14)
MT-11SB05(2.0)	198157-006	5-Oct-07	PAHs (8270-SIM)	Soil
MT-11SB02(2.0)	198157-007	5-Oct-07	PAHs (8270-SIM)	Soil
MT-11SB06(1.5)	198157-008	5-Oct-07	PAHs (8270-SIM)	Soil
MT-11SB01(2.0)	198157-009	5-Oct-07	PAHs (8270-SIM)	Soil
MT-11SB08(2.0)	198157-010	5-Oct-07	PAHs (8270-SIM)	Soil
MT-12SB01(2.0)	198157-011	5-Oct-07	PAHs (8270-SIM)	Soil
MT-10SB01(0.5)	198157-012	5-Oct-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil
MT-12SB02(2.0)	198300-001	9-Oct-07	PAHs (8270-SIM)	Soil
BR2-2SB01(3.0)	198300-002	9-Oct-07	PAHs (8270-SIM), TPH-Diesel/FO (8015B)	Soil

Table 1
Sample Summary
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Site Sample ID	Laboratory Sample ID	Date Sampled	Analyses	Sample Type
BR10-2SB01(3.0)	198301-001	9-Oct-07	TPH-Diesel//FO (8015B)	Soil
BR7-2SB01(1.5)	198301-002	9-Oct-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
BR2-2SB02(2.0)	198301-003	9-Oct-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-2SB03(0.5)	198445-001	15-Oct-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-2SB03(1.0)	198445-002	15-Oct-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-2SB07(1.0)	198445-005	15-Oct-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil
MT-2SB08(1.0)	198445-006	15-Oct-07	PAHs (8270-SIM), TPH-Diesel//FO (8015B)	Soil

* The matching field sample to this field duplicate was put on HOLD status; no data was reported for sample BR7-1SB05 (197939-024).

PAHs: Polynuclear Aromatic Hydrocarbons

TPH: Total Petroleum Hydrocarbons

FO: Fuel Oil

BTEX: Benzene, Toluene, Ethylbenzene, Xylenes

FD: Field duplicate of previous numbered sample, (1), (2), etc.

BOLD: Bold typeface indicates samples/analyses that received full (Level IV) data validation

Table 2
Qualified Data Summary
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Sample ID	Laboratory ID	Analysis Method	Compound	Qualifier	Reason
BR5-2SB07(1.5)	197830-021	8015B	Diesel C12-C24	J+	MS/MSD percent recovery failure
BR3-1SB02(5.0)	197862-004	8270-SIM	Benzol(b)fluoranthene	J+	Continuing calibration verification percent difference failure
BR5-3SB04(2.5)	197862-013	8015B	Diesel C12-C24	UJ	MS/MSD relative percent difference failure
MT-12SB03(2.0)	197862-014	8270-SIM	Benzol(b)fluoranthene	J+	Continuing calibration verification percent difference failure
BR5-3SB02(2.5)	197862-017	8270-SIM	Benzol(b)fluoranthene	J+	Continuing calibration verification percent difference failure
BR9-1SB03(4.5)	197916-005	8270-SIM	Benzol(g,h,i)perylene	J+	Continuing calibration verification percent difference failure
MT-16SB03(1.5)	197916-007	8270-SIM	Benzol(g,h,i)perylene	J+	Continuing calibration verification percent difference failure
MT-13SB02(2.0)	197916-008	8270-SIM	Benzol(b)fluoranthene	J	Internal standard area count failure
MT-13SB02(2.0)	197916-008	8270-SIM	Benzol(k)fluoranthene	UJ	Internal standard area count failure
MT-13SB02(2.0)	197916-008	8270-SIM	Benzol(a)pyrene	UJ	Internal standard area count failure
MT-13SB02(2.0)	197916-008	8270-SIM	Indeno(1,2,3-cd)pyrene	UJ	Internal standard area count failure
MT-13SB02(2.0)	197916-008	8270-SIM	Dibenz(a,η)anthracene	UJ	Internal standard area count failure
MT-13SB02(2.0)	197916-008	8270-SIM	Benzol(g,h,i)perylene	J	Internal standard area count failure
MT-16SB01(1.5)	197916-009	8270-SIM	Benzol(b)fluoranthene	J	Internal standard area count failure
MT-16SB01(1.5)	197916-009	8270-SIM	Benzol(k)fluoranthene	J	Internal standard area count failure
MT-16SB01(1.5)	197916-009	8270-SIM	Benzol(a)pyrene	J	Internal standard area count failure
MT-16SB01(1.5)	197916-009	8270-SIM	Indeno(1,2,3-cd)pyrene	UJ	Internal standard area count failure
MT-16SB01(1.5)	197916-009	8270-SIM	Dibenz(a,h)anthracene	UJ	Internal standard area count failure
MT-16SB01(1.5)	197916-009	8270-SIM	Benzol(g,h,i)perylene	J	Internal standard area count failure
MT-16SB02(1.5)	197916-010	8270-SIM	Benzol(b)fluoranthene	J	Internal standard area count failure
MT-16SB02(1.5)	197916-010	8270-SIM	Benzol(k)fluoranthene	J	Internal standard area count failure
MT-16SB02(1.5)	197916-010	8270-SIM	Benzol(a)pyrene	J	Internal standard area count failure
MT-16SB02(1.5)	197916-010	8270-SIM	Indeno(1,2,3-cd)pyrene	J	Internal standard area count failure
MT-16SB02(1.5)	197916-010	8270-SIM	Dibenz(a,h)anthracene	J	Internal standard area count failure
MT-16SB02(1.5)	197916-010	8270-SIM	Benzol(g,h,i)perylene	J	Internal standard area count failure
MT-2SB04(2.0)	197939-003	8270-SIM	Benzol(g,h,i)perylene	J+	Continuing calibration verification percent difference failure
BR10-1SB01(2.0)	197939-011	8270-SIM	Indeno(1,2,3-cd)pyrene	J-	Continuing calibration verification percent difference failure
BR10-1SB01(2.0)	197939-011	8270-SIM	Dibenz(a,h)anthracene	UJ	Continuing calibration verification percent difference failure
DUP-1-100507	1998157-003	8270-SIM	Pyrene	J	Internal standard area count failure
MT-11SB06(1.5)	1998157-008	8270-SIM	Benzol(g,h,i)perylene	J+	Continuing calibration verification percent difference failure

Table 2
Qualified Data Summary
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Sample ID	Laboratory ID	Analysis Method	Compound	Qualifier	Reason
BR2-2SB01(3.0)	198300-002	8270-SIM	Indeno(1,2,3-cd)pyrene	J-	Continuing calibration verification percent difference failure
BR2-2SB01(3.0)	198300-002	8270-SIM	Dibenz(a,h)anthracene	J-	Continuing calibration verification percent difference failure
BR2-2SB01(3.0)	198300-002	8270-SIM	Benzo(g,h,i)perylene	J-	Continuing calibration verification percent difference failure
BR7-2SB01(1.5)	198301-002	8270-SIM	Benzo(b)fluoranthene	J+	Continuing calibration verification percent difference failure
BR2-2SB02(2.0)	198301-003	8270-SIM	Benzo(b)fluoranthene	J+	Continuing calibration verification percent difference failure

CCV: Continuing calibration verification

%D: Percent difference

%R: Percent recovery

MS/MSD: Matrix spike/matrix spike duplicate

LCS: Laboratory control sample

RRF: Relative response factor

Table 3
Summary of Field Duplicates
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Original Sample ID	Laboratory ID	Matrix	Compound	Original Results*	Duplicate Sample ID	Laboratory ID	Duplicate Results*	RPD
BR1-2SSB04(6.5)	197830-007	Soil	All PAHs	ND	DUP-3-092407	197830-011	ND	NA
BR1-2SSB04(6.5)	197830-007	Soil	Diesel C12-C24	ND	DUP-3-092407	197830-011	ND	NA
BR1-2SSB04(6.5)	197830-007	Soil	Fuel Oil C24-C36	ND	DUP-3-092407	197830-011	ND	NA
BR1-1SB01(2.0)	197830-015	Soil	Diesel C12-C24	29	DUP-1-092407	197830-012	25	15%
BR1-1SB01(2.0)	197830-015	Soil	Fuel Oil C24-C36	220	DUP-1-092407	197830-012	120	59%
BR5-2SSB06(2.5)	197831-003	Soil	Diesel C12-C24	780	DUP2-092407	197831-004	520	40%
BR5-2SSB06(2.5)	197831-003	Soil	Fuel Oil C24-C36	580	DUP2-092407	197831-004	340	52%
BR3-1SB02(10.0)	197862-005	Soil	All PAHs	ND	DUP-2-092507	197862-006	ND	NA
BR6-1SB01(1.5)	197862-020	Soil	All PAHs	ND	DUP-1-092507	197862-021	ND	NA
BR6-1SB01(1.5)	197862-020	Soil	Diesel C12-C24	ND	DUP-1-092507	197862-021	ND	NA
BR6-1SB01(1.5)	197862-020	Soil	Fuel Oil C24-C36	ND	DUP-1-092507	197862-021	ND	NA
MT-17SB02(2.0)	197939-014	Soil	Diesel C12-C24	ND	DUP-1-092707	197939-015	1.9	NC
MT-17SB02(2.0)	197939-014	Soil	Fuel Oil C24-C36	6	DUP-1-092707	197939-015	32	-137%
BR7-1SB05(1.5)	197939-024	Soil	Diesel C12-C24	N/A	DUP-2-092707	197937-002	ND	NA
BR7-1SB05(1.5)	197939-024	Soil	Fuel Oil C24-C36	N/A	DUP-2-092707	197937-002	ND	NA
MT-3SSB04(2.0)	197978-003	Soil	Phenanthrene	1.8	DUP-1-092807	197978-005	5.2	NC
MT-3SSB04(2.0)	197978-003	Soil	Fluoranthene	6.1	DUP-1-092807	197978-005	14	NC
MT-3SSB04(2.0)	197978-003	Soil	Pyrene	6.7	DUP-1-092807	197978-005	14	NC
MT-3SSB04(2.0)	197978-003	Soil	Benzo(a)anthracene	5.6	DUP-1-092807	197978-005	11	NC
MT-3SSB04(2.0)	197978-003	Soil	Chrysene	7.1	DUP-1-092807	197978-005	12	NC
MT-3SSB04(2.0)	197978-003	Soil	Benzo(b)fluoranthene	9.3	DUP-1-092807	197978-005	20	-73%
MT-3SSB04(2.0)	197978-003	Soil	Benzo(k)fluoranthene	3.1	DUP-1-092807	197978-005	5.7	NC
MT-3SSB04(2.0)	197978-003	Soil	Benzo(a)pyrene	5.9	DUP-1-092807	197978-005	11	NC
MT-3SSB04(2.0)	197978-003	Soil	Indeno(1,2,3-cd)pyrene	2.9	DUP-1-092807	197978-005	7	NC
MT-3SSB04(2.0)	197978-003	Soil	Dibenz(a,h)anthracene	1.1	DUP-1-092807	197978-005	2.4	NC
MT-3SSB04(2.0)	197978-003	Soil	Benzo(g,h,i)perylene	3.4	DUP-1-092807	197978-005	8.2	NC
MT-3SSB04(2.0)	197978-003	Soil	All other PAHs	ND	DUP-1-092807	197978-005	ND	NA
MT-3SSB04(2.0)	197978-003	Soil	Diesel C12-C24	ND	DUP-1-092807	197978-005	ND	NA
MT-3SSB04(2.0)	197978-003	Soil	Fuel Oil C24-C36	6.7	DUP-1-092807	197978-005	9.5	-35%

Table 3
Summary of Field Duplicates
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Original Sample ID	Laboratory ID	Matrix	Compound	Original Results*	Duplicate Sample ID	Laboratory ID	Duplicate Results*	RPD
MT-15SB02(3.5)	197978-010	Soil	Pyrene	110	DUP-3-092807	197978-011	ND	NC
MT-15SB02(3.5)	197978-010	Soil	Benzo(a)anthracene	180	DUP-3-092807	197978-011	ND	NC
MT-15SB02(3.5)	197978-010	Soil	Chrysene	180	DUP-3-092807	197978-011	ND	NC
MT-15SB02(3.5)	197978-010	Soil	Benzo(b)fluoranthene	340	DUP-3-092807	197978-011	ND	NC
MT-15SB02(3.5)	197978-010	Soil	Benzo(a)pyrene	300	DUP-3-092807	197978-011	ND	NC
MT-15SB02(3.5)	197978-010	Soil	Indeno(1,2,3-cd)pyrene	220	DUP-3-092807	197978-011	ND	NC
MT-15SB02(3.5)	197978-010	Soil	Benzo(g,h,i)perylene	410	DUP-3-092807	197978-011	ND	NC
MT-15SB02(3.5)	197978-010	Soil	All other PAHs	ND	DUP-3-092807	197978-011	ND	NA
MT-15SB02(3.5)	197978-010	Soil	Diesel C12-C24	1700	DUP-3-092807	197978-011	1300	27%
MT-15SB02(3.5)	197978-010	Soil	Fuel Oil C24-C36	5300	DUP-3-092807	197978-011	4000	28%
BR7-2SSB02(1.5)	197978-018	Soil	All PAHs	ND	DUP-2-092807	197978-019	ND	NA
BR7-2SSB02(1.5)	197978-018	Soil	Diesel C12-C24	ND	DUP-2-092807	197978-019	ND	NA
BR7-2SSB02(1.5)	197978-018	Soil	Fuel Oil C24-C36	ND	DUP-2-092807	197978-019	ND	NA
BR10-1SB06(2.0)	197998-007	Soil	Naphthalene	8.9	DUP-3-100107	197998-006	4.7	NC
BR10-1SB06(2.0)	197998-007	Soil	2-Methylnaphthalene	14	DUP-3-100107	197998-006	32	NC
BR10-1SB06(2.0)	197998-007	Soil	Fluorene	ND	DUP-3-100107	197998-006	5.1	NC
BR10-1SB06(2.0)	197998-007	Soil	Phenanthrene	49	DUP-3-100107	197998-006	72	-38%
BR10-1SB06(2.0)	197998-007	Soil	Anthracene	ND	DUP-3-100107	197998-006	9.7	NC
BR10-1SB06(2.0)	197998-007	Soil	Fluoranthene	100	DUP-3-100107	197998-006	84	17%
BR10-1SB06(2.0)	197998-007	Soil	Pyrene	67	DUP-3-100107	197998-006	67	0%
BR10-1SB06(2.0)	197998-007	Soil	Benzo(a)anthracene	31	DUP-3-100107	197998-006	23	30%
BR10-1SB06(2.0)	197998-007	Soil	Chrysene	49	DUP-3-100107	197998-006	29	NC
BR10-1SB06(2.0)	197998-007	Soil	Benzo(b)fluoranthene	46	DUP-3-100107	197998-006	41	11%
BR10-1SB06(2.0)	197998-007	Soil	Benzo(k)fluoranthene	15	DUP-3-100107	197998-006	11	31%
BR10-1SB06(2.0)	197998-007	Soil	Benzo(a)pyrene	50	DUP-3-100107	197998-006	11	NC
BR10-1SB06(2.0)	197998-007	Soil	Indeno(1,2,3-cd)pyrene	15	DUP-3-100107	197998-006	8.3	NC
BR10-1SB06(2.0)	197998-007	Soil	Benzo(g,h,i)perylene	24	DUP-3-100107	197998-006	15	46%
BR10-1SB06(2.0)	197998-007	Soil	All other PAHs	ND	DUP-3-100107	197998-006	ND	NA
BR10-1SB06(2.0)	197998-007	Soil	Diesel C12-C24	44	DUP-3-100107	197998-006	46	-4.4%

Table 3
Summary of Field Duplicates
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

Original Sample ID	Laboratory ID	Matrix	Compound	Original Results*	Duplicate Sample ID	Laboratory ID	Duplicate Results*	RPD
BR10-1SB06(2.0)	197998-007	Soil	Fuel Oil C24-C36	55	DUP-3-100107	197998-006	69	-23%
MT-9SB03(2.0)	198002-001	Soil	All PAHs	ND	DUP-1-100107	197998-001	ND	NA
MT-9SB03(2.0)	198002-001	Soil	Diesel C12-C24	3.5	DUP-1-100107	197998-001	1.9	NC
MT-9SB03(2.0)	198002-001	Soil	Fuel Oil C24-C36	6.8	DUP-1-100107	197998-001	ND	NC
MT-13SB01(2.0)	198002-002	Soil	Naphthalene	17	DUP-2-100107	197998-004	ND	NC
MT-13SB01(2.0)	198002-002	Soil	2-Methylnaphthalene	17	DUP-2-100107	197998-004	ND	NC
MT-13SB01(2.0)	198002-002	Soil	Acenaphthylene	25	DUP-2-100107	197998-004	ND	NC
MT-13SB01(2.0)	198002-002	Soil	Phenanthrene	66	DUP-2-100107	197998-004	76	-14%
MT-13SB01(2.0)	198002-002	Soil	Anthracene	26	DUP-2-100107	197998-004	ND	NC
MT-13SB01(2.0)	198002-002	Soil	Fluoranthene	110	DUP-2-100107	197998-004	86	24%
MT-13SB01(2.0)	198002-002	Soil	Pyrene	190	DUP-2-100107	197998-004	120	45%
MT-13SB01(2.0)	198002-002	Soil	Benzo(a)anthracene	110	DUP-2-100107	197998-004	58	NC
MT-13SB01(2.0)	198002-002	Soil	Chrysene	140	DUP-2-100107	197998-004	77	NC
MT-13SB01(2.0)	198002-002	Soil	Benzo(b)fluoranthene	160	DUP-2-100107	197998-004	150	6.5%
MT-13SB01(2.0)	198002-002	Soil	Benzo(k)fluoranthene	54	DUP-2-100107	197998-004	ND	NC
MT-13SB01(2.0)	198002-002	Soil	Benzo(a)pyrene	130	DUP-2-100107	197998-004	110	17%
MT-13SB01(2.0)	198002-002	Soil	Indeno(1,2,3-cd)pyrene	51	DUP-2-100107	197998-004	ND	NC
MT-13SB01(2.0)	198002-002	Soil	Dibenz(a,h)anthracene	18	DUP-2-100107	197998-004	ND	NC
MT-13SB01(2.0)	198002-002	Soil	Benzo(g,h,i)perylene	66	DUP-2-100107	197998-004	68	-3.0%
MT-13SB01(2.0)	198002-002	Soil	All other PAHs	ND	DUP-2-100107	197998-004	ND	NA
MT-13SB01(2.0)	198002-002	Soil	Diesel C12-C24	52	DUP-2-100107	197998-004	47	10%
MT-13SB01(2.0)	198002-002	Soil	Fuel Oil C24-C36	560	DUP-2-100107	197998-004	500	11%
MT-11SB07(2.0)	198157-005	Soil	Fluoranthene	ND	DUP-1-100507	198157-003	1.1	NC
MT-11SB07(2.0)	198157-005	Soil	Pyrene	ND	DUP-1-100507	198157-003	0.5	NC
MT-11SB07(2.0)	198157-005	Soil	Benzo(b)fluoranthene	ND	DUP-1-100507	198157-003	0.87	NC
MT-11SB07(2.0)	198157-005	Soil	Benzo(g,h,i)perylene	0.55	DUP-1-100507	198157-003	0.89	-47%
MT-11SB07(2.0)	198157-005	Soil	All other PAHs	ND	DUP-1-100507	198157-003	ND	NA

Table 3
Summary of Field Duplicates
Fuel Distribution System Field Sampling Event
The Presidio of San Francisco, CA

*Units for TPH analyses are mg/kg; units for all other organic analyses are ug/kg.

RL: Reporting limit

PAHs: Polynuclear Aromatic Hydrocarbons

ND: Not detected

NC: Not calculated. The absolute difference between the sample result and the duplicate sample result is less than the reporting limit.

N/A: Not analyzed

NA: Not applicable. Calculation of the relative percent difference between the sample result and the duplicate sample result is not applicable.

Appendix E
Surveyor's Report

POINT NO.	FIELD PT CLASS	DATE	NORTHING NAD 27	EASTING NAD 27	LATITUDE	LONGITUDE	ELEVATION NVD 29	ELEVATION PLLW	ORGANIZATION	FIELD PT. NAME
200	FL	10/15/2007	477623.99	1433426.24	37.7954127	-122.4620359	237.90	235.26	PLS SURVEYS INC	MT-13SB02
221	FL	10/15/2007	477956.06	1433211.53	37.7963121	-122.4628029	203.39	200.75	PLS SURVEYS INC	MT-12SB04
222	FL	10/15/2007	477996.35	1433147.27	37.7964190	-122.4630282	205.71	203.07	PLS SURVEYS INC	MT-12SB03
223	FL	10/15/2007	477722.60	1433222.40	37.7956717	-122.4627483	233.55	230.91	PLS SURVEYS INC	MT-13SB01
225	FL	10/15/2007	478063.20	1433243.32	37.7966081	-122.4627006	192.81	190.17	PLS SURVEYS INC	BR6-1SB01
226	FL	10/15/2007	478258.03	1433345.29	37.7971489	-122.4623620	175.20	172.56	PLS SURVEYS INC	BR6-1SB02
227	FL	10/15/2007	478318.50	1433417.29	37.7973191	-122.4621172	169.43	166.78	PLS SURVEYS INC	BR6-1SB03
228	FL	10/15/2007	482168.48	1430907.35	37.8077452	-122.4710827	35.48	32.84	PLS SURVEYS INC	BR9-1SB01
229	FL	10/15/2007	482118.19	1430916.22	37.8076077	-122.4710483	39.12	36.48	PLS SURVEYS INC	BR9-1SB02
230	FL	10/15/2007	482068.31	1430925.94	37.8074713	-122.4710110	42.44	39.80	PLS SURVEYS INC	BR9-1SB03
231	FL	10/15/2007	479646.46	1435529.85	37.8010866	-122.4549033	45.67	43.03	PLS SURVEYS INC	BR10-1SB07
232	FL	10/15/2007	479629.19	1435554.52	37.8010406	-122.4548167	45.19	42.55	PLS SURVEYS INC	BR10-2SB01
233	FL	10/15/2007	479672.87	1435536.75	37.8011595	-122.4548814	44.72	42.08	PLS SURVEYS INC	BR10-1SB06
234	FL	10/15/2007	479725.31	1435548.64	37.8013042	-122.4548440	42.50	39.86	PLS SURVEYS INC	BR10-1SB05
235	FL	10/15/2007	479927.64	1435580.89	37.8018615	-122.4547470	38.54	35.90	PLS SURVEYS INC	BR10-1SB03
236	FL	10/15/2007	479943.11	1435585.04	37.8019043	-122.4547338	38.20	35.56	PLS SURVEYS INC	BR10-1SB02
237	FL	10/15/2007	479986.88	1435597.59	37.8020252	-122.4546935	36.76	34.12	PLS SURVEYS INC	BR10-1SB01
238	FL	10/15/2007	479923.99	1435586.08	37.8018518	-122.4547288	38.11	35.47	PLS SURVEYS INC	BR10-1SB04
239	FL	10/15/2007	479682.69	1435292.26	37.8011724	-122.4557281	52.66	50.02	PLS SURVEYS INC	BR7-2SB02
240	FL	10/15/2007	479777.19	1435141.34	37.8014232	-122.4562572	51.56	48.92	PLS SURVEYS INC	BR7-2SB01
241	FL	10/15/2007	479924.81	1434932.42	37.8018166	-122.4569908	46.63	43.99	PLS SURVEYS INC	BR7-1SB06
244	FL	10/15/2007	481131.93	1430518.10	37.8048767	-122.4723541	188.35	185.71	PLS SURVEYS INC	MT-3SB02
245	FL	10/15/2007	481260.14	1430620.71	37.8052347	-122.4720084	179.03	176.39	PLS SURVEYS INC	MT-3SB01
246	FL	10/15/2007	481451.06	1430718.58	37.8057645	-122.4716836	150.45	147.81	PLS SURVEYS INC	MT-2SB06
247	FL	10/15/2007	481562.16	1430771.30	37.8060726	-122.4715093	121.62	118.98	PLS SURVEYS INC	MT-2SB01
248	FL	10/15/2007	481507.40	1430741.51	37.8059205	-122.4716084	126.80	124.16	PLS SURVEYS INC	MT-2SB05
249	FL	10/15/2007	481494.47	1430756.97	37.8058859	-122.4715539	125.73	123.09	PLS SURVEYS INC	MT-2SB04
250	FL	10/15/2007	481508.76	1430769.24	37.8059259	-122.4715125	125.74	123.10	PLS SURVEYS INC	MT-2SB02
251	FL	10/15/2007	481481.03	1430772.74	37.8058499	-122.4714984	124.65	122.01	PLS SURVEYS INC	MT-2SB03
252	FL	10/15/2007	480532.54	1429563.41	37.8031757	-122.4756141	246.00	243.36	PLS SURVEYS INC	BR1-2SB04
253	FL	10/15/2007	480531.53	1429572.70	37.8031735	-122.4755819	245.97	243.33	PLS SURVEYS INC	BR1-2SB05
254	FL	10/15/2007	480547.71	1429573.10	37.8032179	-122.4755816	245.72	243.08	PLS SURVEYS INC	BR1-2SB06
255	FL	10/15/2007	480342.95	1429561.89	37.8026551	-122.4756055	250.33	247.69	PLS SURVEYS INC	BR1-2SB02
256	FL	10/15/2007	480342.94	1429569.46	37.8026555	-122.4755793	250.21	247.57	PLS SURVEYS INC	BR1-2SB03
257	FL	10/15/2007	480332.47	1429569.37	37.8026267	-122.4755788	250.43	247.79	PLS SURVEYS INC	BR1-2SB01
258	FL	10/15/2007	480189.44	1429571.66	37.8022341	-122.4755605	253.98	251.34	PLS SURVEYS INC	BR1-1SB03
259	FL	10/15/2007	479616.24	1429524.03	37.8006576	-122.4756834	268.16	265.52	PLS SURVEYS INC	BR1-1SB02
260	FL	10/15/2007	479551.15	1429530.71	37.8004792	-122.4756555	268.94	266.30	PLS SURVEYS INC	BR1-1SB01
261	FL	10/15/2007	479362.15	1429515.48	37.7999594	-122.4756944	282.82	280.18	PLS SURVEYS INC	MT-5SB02
262	FL	10/15/2007	479608.56	1429614.04	37.8006417	-122.4753714	267.98	265.34	PLS SURVEYS INC	MT-5SB01
263	FL	10/15/2007	479506.69	1430171.35	37.8003943	-122.4734355	236.35	233.71	PLS SURVEYS INC	BR2-2SB01
264	FL	10/15/2007	479501.20	1430178.80	37.8003796	-122.4734093	235.78	233.14	PLS SURVEYS INC	BR2-2SB02
265	FL	10/15/2007	479509.63	1430184.54	37.8004031	-122.4733900	234.45	231.81	PLS SURVEYS INC	BR2-2SB03
266	FL	10/15/2007	479811.12	1430259.06	37.8012352	-122.4731542	227.02	224.38	PLS SURVEYS INC	BR3-1SB01
267	FL	10/15/2007	479851.24	1430481.10	37.8013582	-122.4723888	212.86	210.22	PLS SURVEYS INC	BR3-1SB02
268	FL	10/15/2007	479879.11	1430826.55	37.8014547	-122.4711954	180.78	178.14	PLS SURVEYS INC	BR3-1SB03
269	FL	10/15/2007	479534.86	1431244.84	37.8005336	-122.4697229	141.49	138.85	PLS SURVEYS INC	BR3-2SB01
270	FL	10/15/2007	478849.49	1430519.91	37.7986100	-122.4721814	253.82	251.18	PLS SURVEYS INC	BR5-2SB06



POINT NO.	FIELD PT CLASS	DATE	NORTHING NAD 27	EASTING NAD 27	LATITUDE	LONGITUDE	ELEVATION NVD 29	ELEVATION PLLW	ORGANIZATION	FIELD PT. NAME
271	FL	10/15/2007	478780.48	1430452.03	37.7984165	-122.4724112	257.88	255.24	PLS SURVEYS INC	BR5-2SB03
272	FL	10/15/2007	478795.04	1430451.94	37.7984565	-122.4724126	257.60	254.96	PLS SURVEYS INC	BR5-2SB05
273	FL	10/15/2007	478788.58	1430444.08	37.7984383	-122.4724394	257.98	255.34	PLS SURVEYS INC	BR5-2SB04
274	FL	10/15/2007	478782.61	1430435.72	37.7984214	-122.4724678	258.43	255.79	PLS SURVEYS INC	BR5-2SB01
275	FL	10/15/2007	478798.12	1430440.62	37.7984643	-122.4724520	257.93	255.29	PLS SURVEYS INC	BR5-2SB02
276	FL	10/15/2007	478988.10	1430701.75	37.7990010	-122.4715623	242.60	239.96	PLS SURVEYS INC	BR5-2SB07
277	FL	10/15/2007	479009.85	1430780.53	37.7990653	-122.4712913	235.82	233.18	PLS SURVEYS INC	BR5-2SB08
278	FL	10/15/2007	478804.01	1430900.63	37.7985071	-122.4708607	217.77	215.13	PLS SURVEYS INC	BR5-3SB01
279	FL	10/15/2007	478738.55	1430916.49	37.7983283	-122.4708011	216.87	214.23	PLS SURVEYS INC	BR5-3SB02
280	FL	10/15/2007	478672.67	1430943.55	37.7981489	-122.4707026	217.69	215.05	PLS SURVEYS INC	BR5-3SB03
281	FL	10/15/2007	478614.04	1431011.93	37.7979919	-122.4704617	219.27	216.63	PLS SURVEYS INC	BR5-3SB04
282	FL	10/15/2007	478486.96	1430818.85	37.7976318	-122.4711206	249.35	246.71	PLS SURVEYS INC	MT-9SB01
283	FL	10/15/2007	478444.54	1430999.89	37.7975258	-122.4704911	221.40	218.76	PLS SURVEYS INC	MT-9SB02
284	FL	10/15/2007	478344.20	1431200.34	37.7972619	-122.4697902	219.91	217.27	PLS SURVEYS INC	MT-9SB03
285	FL	10/15/2007	478184.07	1434514.59	37.7970131	-122.4583106	109.09	106.45	PLS SURVEYS INC	MT-15SB02
286	FL	10/15/2007	478257.86	1434555.74	37.7972180	-122.4581736	107.88	105.24	PLS SURVEYS INC	MT-15SB03
287	FL	10/15/2007	477941.14	1434208.68	37.7963285	-122.4593515	142.53	139.89	PLS SURVEYS INC	MT-15SB01
288	FL	10/15/2007	478303.49	1435280.12	37.7973849	-122.4556704	57.87	55.23	PLS SURVEYS INC	BR13-1SB03
289	FL	10/15/2007	478542.01	1435010.63	37.7980243	-122.4566201	89.29	86.65	PLS SURVEYS INC	BR13-1SB01
290	FL	10/15/2007	478360.30	1435237.20	37.7975384	-122.4558230	69.89	67.25	PLS SURVEYS INC	BR13-1SB02
291	FL	10/15/2007	478732.20	1435205.76	37.7985577	-122.4559587	80.68	78.04	PLS SURVEYS INC	BR12-1SB01
292	FL	10/15/2007	478726.98	1435213.10	37.7985438	-122.4559329	80.92	78.28	PLS SURVEYS INC	BR12-1SB03
293	FL	10/15/2007	478676.23	1434814.04	37.7983816	-122.4573101	86.87	84.23	PLS SURVEYS INC	MT-16SB03
294	FL	10/15/2007	478569.72	1434748.31	37.7980853	-122.4575298	91.14	88.50	PLS SURVEYS INC	MT-16SB02
295	FL	10/15/2007	478516.18	1434756.43	37.7979388	-122.4574978	94.15	91.51	PLS SURVEYS INC	MT-16SB01
296	FL	10/15/2007	479173.52	1435123.47	37.7997647	-122.4562754	68.17	65.53	PLS SURVEYS INC	MT-17SB01
297	FL	10/15/2007	479158.45	1435163.54	37.7997256	-122.4561356	67.28	64.64	PLS SURVEYS INC	MT-17SB02
298	FL	10/15/2007	479219.85	1435153.36	37.7998937	-122.4561753	66.46	63.82	PLS SURVEYS INC	MT-17SB03
299	FL	10/15/2007	479248.70	1435175.40	37.7999741	-122.4561011	63.61	60.97	PLS SURVEYS INC	MT-17SB04
300	FL	10/15/2007	479331.76	1435231.59	37.8002054	-122.4559127	61.13	58.49	PLS SURVEYS INC	MT-17SB05
301	FL	10/15/2007	479397.67	1435273.33	37.8003888	-122.4557730	59.22	56.58	PLS SURVEYS INC	MT-17SB06
302	FL	10/15/2007	479566.10	1435375.31	37.8008571	-122.4554323	56.15	53.51	PLS SURVEYS INC	MT-17SB07
303	FL	10/15/2007	479613.02	1435404.70	37.8009876	-122.4553340	54.19	51.55	PLS SURVEYS INC	MT-17SB08
304	FL	10/15/2007	479580.19	1435453.18	37.8009002	-122.4551639	52.74	50.10	PLS SURVEYS INC	MT-17SB09
305	FL	10/15/2007	479581.94	1435495.05	37.8009074	-122.4550191	48.71	46.07	PLS SURVEYS INC	MT-17SB10
306	FL	10/15/2007	479886.41	1434914.98	37.8017101	-122.4570484	46.85	44.21	PLS SURVEYS INC	BR7-1SB05
307	FL	10/15/2007	479927.53	1434800.04	37.8018165	-122.4574491	43.15	40.51	PLS SURVEYS INC	BR7-1SB04
308	FL	10/15/2007	479955.96	1434721.94	37.8018900	-122.4577214	43.73	41.09	PLS SURVEYS INC	BR7-1SB03
309	FL	10/15/2007	479997.92	1434609.46	37.8019988	-122.4581137	48.34	45.70	PLS SURVEYS INC	BR7-1SB02
310	FL	10/15/2007	480037.74	1434508.58	37.8021023	-122.4584656	48.18	45.54	PLS SURVEYS INC	BR7-1SB01
311	FL	10/15/2007	479307.45	1434092.88	37.8000733	-122.4598512	81.78	79.14	PLS SURVEYS INC	BR6-3SB03
312	FL	10/15/2007	479254.20	1434059.04	37.7999252	-122.4599644	83.37	80.73	PLS SURVEYS INC	BR6-3SB02
313	FL	10/15/2007	479241.15	1434006.66	37.7998863	-122.4601448	83.87	81.23	PLS SURVEYS INC	BR6-3SB01
314	FL	10/15/2007	479632.09	1435905.77	37.8010687	-122.4536015	36.91	34.27	PLS SURVEYS INC	BR10-3SB02
315	FL	10/15/2007	479668.70	1435925.21	37.8011703	-122.4535368	35.59	32.95	PLS SURVEYS INC	BR10-3SB01
316	FL	10/15/2007	481478.37	1430770.34	37.8058425	-122.4715065	124.92	122.28	PLS SURVEYS INC	MT-2SB03
1012	FL	10/15/2007	478246.14	1432250.16	37.7970532	-122.4661504	268.75	266.11	PLS SURVEYS INC	MT-11SB02



POINT NO.	FIELD PT CLASS	DATE	NORTHING NAD 27	EASTING NAD 27	LATITUDE	LONGITUDE	ELEVATION NVD 29	ELEVATION PLLW	ORGANIZATION	FIELD PT. NAME
1201	FL	10/15/2007	478074.53	1433013.40	37.7966260	-122.4634970	262.46	259.82	PLS SURVEYS INC	MT-12SB01
1202	FL	10/15/2007	478130.61	1432850.56	37.7967706	-122.4640646	295.64	293.00	PLS SURVEYS INC	MT-11SB08
1203	FL	10/15/2007	478155.58	1432737.22	37.7968326	-122.4644586	303.07	300.43	PLS SURVEYS INC	MT-11SB07
1204	FL	10/15/2007	478174.82	1432646.05	37.7968802	-122.4647754	305.02	302.38	PLS SURVEYS INC	MT-11SB06
1205	FL	10/15/2007	478193.95	1432536.05	37.7969264	-122.4651574	294.38	291.74	PLS SURVEYS INC	MT-11SB05
1206	FL	10/15/2007	478210.12	1432441.93	37.7969654	-122.4654843	293.00	290.36	PLS SURVEYS INC	MT-11SB04
1207	FL	10/15/2007	478227.41	1432345.53	37.7970073	-122.4658191	287.30	284.66	PLS SURVEYS INC	MT-11SB03
1209	FL	10/15/2007	478264.20	1432141.09	37.7970965	-122.4665292	254.19	251.55	PLS SURVEYS INC	MT-11SB01
1210	FL	10/15/2007	478330.37	1431509.04	37.7972417	-122.4687210	203.61	200.97	PLS SURVEYS INC	MT-10SB01
1212	FL	10/15/2007	478040.17	1433095.71	37.7965364	-122.4632097	233.39	230.75	PLS SURVEYS INC	MT-12SB02
2231	FL	10/15/2007	480626.39	1430219.33	37.8034714	-122.4733511	214.07	211.43	PLS SURVEYS INC	MT-4SB02
2232	FL	10/15/2007	480655.67	1430221.36	37.8035519	-122.4733463	214.01	211.37	PLS SURVEYS INC	MT-4SB01
2233	FL	10/15/2007	480691.87	1430241.33	37.8036524	-122.4732798	213.16	210.52	PLS SURVEYS INC	MT-3SB09
2234	FL	10/15/2007	480694.78	1430263.44	37.8036617	-122.4732035	212.50	209.86	PLS SURVEYS INC	MT-3SB08
2235	FL	10/15/2007	480750.05	1430299.91	37.8038156	-122.4730813	212.90	210.26	PLS SURVEYS INC	MT-3SB07
2236	FL	10/15/2007	480803.23	1430304.29	37.8039618	-122.4730700	212.31	209.67	PLS SURVEYS INC	MT-3SB06
2237	FL	10/15/2007	480818.06	1430317.51	37.8040033	-122.4730254	211.81	209.17	PLS SURVEYS INC	MT-3SB05
2238	FL	10/15/2007	480850.01	1430337.66	37.8040922	-122.4729580	210.80	208.16	PLS SURVEYS INC	MT-3SB03
2239	FL	10/15/2007	480839.10	1430355.50	37.8040633	-122.4728955	209.98	207.34	PLS SURVEYS INC	MT-3SB04
2240	FL	10/15/2007	480582.04	1430176.21	37.8033471	-122.4734971	216.39	213.75	PLS SURVEYS INC	MT-4SB03
2241	FL	10/15/2007	480532.37	1430159.73	37.8032098	-122.4735505	219.96	217.32	PLS SURVEYS INC	MT-4SB04
2242	FL	10/15/2007	480496.72	1430124.55	37.8031098	-122.4736697	221.28	218.64	PLS SURVEYS INC	MT-4SB05
2243	FL	10/15/2007	480451.09	1430105.52	37.8029835	-122.4737322	224.23	221.59	PLS SURVEYS INC	MT-4SB06



Appendix F

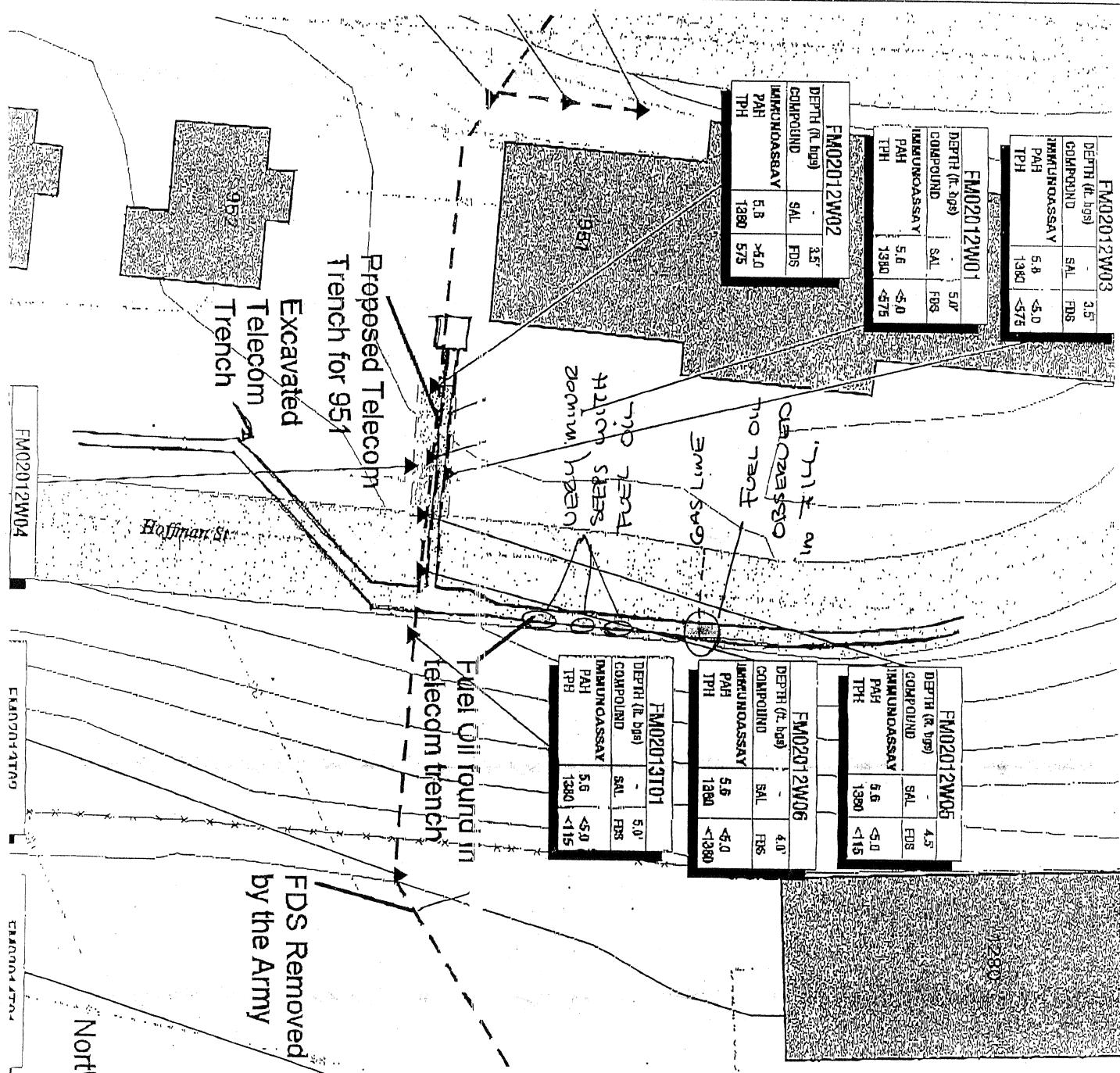
Additional Investigation Results Addressing Data Gaps in FDS Removal Program

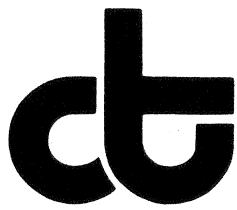
Appendix F-1
FDS Section MT-2 Historical Documents

COPY

TRANSMISSION OK

TX/RX NO	4309
CONNECTION TEL	
SUBADDRESS	
CONNECTION ID	
ST. TIME	07/07 11:00
USAGE T	00'54
PGS. SENT	1
RESULT	OK





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

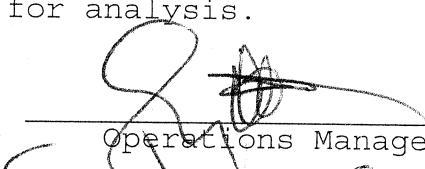
Laboratory Number 173495

Presidio Trust
P.O. Box 29052
San Francisco, CA 94129-0052

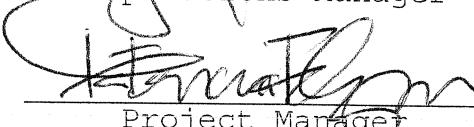
Project#: 2990-CS AREA B
Location: 951 - Hoffman St.

Sample ID	Lab ID
951SS100 [2.5]	173495-001
951SS101 [1.3]	173495-002

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Signature: 
Operations Manager

Date: 8/12/04

Signature: 
Project Manager

Date: 8/12/04

NELAP # 01107CA

Page 1 of

Laboratory Number: 173495

Receipt Date: 7/19/04

Client: Presidio Trust

Project#: 2990-CS AREA B

Location: 951 Hoffman Street

CASE NARRATIVE

This hardcopy data package contains sample and QC results for two soil samples that were received on July 19, 2004. The samples were received cold and intact. All soil results were reported on a dry weight basis.

Total Extractable Hydrocarbon by EPA 8015B: silica gel clean up was performed prior to analysis. No analytical problems were encountered.

Purgeable Organics by GC/MS EPA 624: Low response was observed for MTBE in the CCV that was analyzed on July 20, 2004. This compound met the minimum response criteria and was not detected in the associated samples or method blank. No other analytical problems were encountered.

Chain of Custody

COOLER RECEIPT CHECKLIST

Login#: 173495 Date Received: 7-19-04 Number of Coolers: 1
Client: Presidio Trust Project: 2990-CS Area B

A. Preliminary Examination Phase

- Date Opened: 7-19-04 By (print): Troy Windsor (sign) Troy E. Windsor
1. Did cooler come with a shipping slip (airbill, etc.)? YES NO
If YES, enter carrier name and airbill number: _____
2. Were custody seals on outside of cooler? YES NO
How many and where? _____ Seal date: _____ Seal name: _____ N/A
3. Were custody seals unbroken and intact at the date and time of arrival? YES NO
4. Were custody papers dry and intact when received? YES NO
5. Were custody papers filled out properly (ink, signed, etc.)? YES NO
6. Did you sign the custody papers in the appropriate place? YES NO
7. Was project identifiable from custody papers? YES NO
If YES, enter project name at the top of this form.
8. If required, was sufficient ice used? Samples should be 2-6 degrees C. YES NO
Type of ice: None Temperature: 22.8 IR gun

B. Login Phase

- Date Logged In: 7-19-04 By (print): Troy Windsor (sign) Troy E. Windsor
1. Describe type of packing in cooler: in ziploc bag
2. Did all bottles arrive unbroken? YES NO
3. Were labels in good condition and complete (ID, date, time, signature, etc.)? YES NO
4. Did bottle labels agree with custody papers? YES NO
5. Were appropriate containers used for the tests indicated? YES NO
6. Were correct preservatives added to samples? YES NO N/A
7. Was sufficient amount of sample sent for tests indicated? YES NO
8. Were bubbles absent in VOA samples? If NO, list sample IDs below YES NO N/A
9. Was the client contacted concerning this sample delivery? YES NO
If YES, give details below.

Who was called? _____ By whom? _____ Date: _____

Additional Comments:

TEH results & QC Summary

Total Extractable Hydrocarbons

Lab #:	173495	Location:	951 - Hoffman St.
Client:	Presidio Trust	Prep:	SHAKER TABLE
Project#:	2990-CS AREA B	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	07/16/04
Units:	mg/Kg	Received:	07/19/04
Batch#:	93002	Prepared:	07/20/04

Field ID: 951SS100[2.5] Moisture: 23%
 Type: SAMPLE Diln Fac: 5.000
 Lab ID: 173495-001 Analyzed: 07/21/04
 Basis: dry Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C12-C24	2,900 H	6.5
Motor Oil C24-C36	1,300 L	32

Surrogate	%REC	Limits
Hexacosane	81	52-131

Field ID: 951SS101[1.3] Moisture: 18%
 Type: SAMPLE Diln Fac: 1.000
 Lab ID: 173495-002 Analyzed: 07/21/04
 Basis: dry Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C12-C24	77 H Y	1.2
Motor Oil C24-C36	120 L	6.1

Surrogate	%REC	Limits
Hexacosane	64	52-131

Type: BLANK Diln Fac: 1.000
 Lab ID: QC258283 Analyzed: 07/20/04
 Basis: as received Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C12-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
Hexacosane	70	52-131

H= Heavier hydrocarbons contributed to the quantitation

L= Lighter hydrocarbons contributed to the quantitation

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

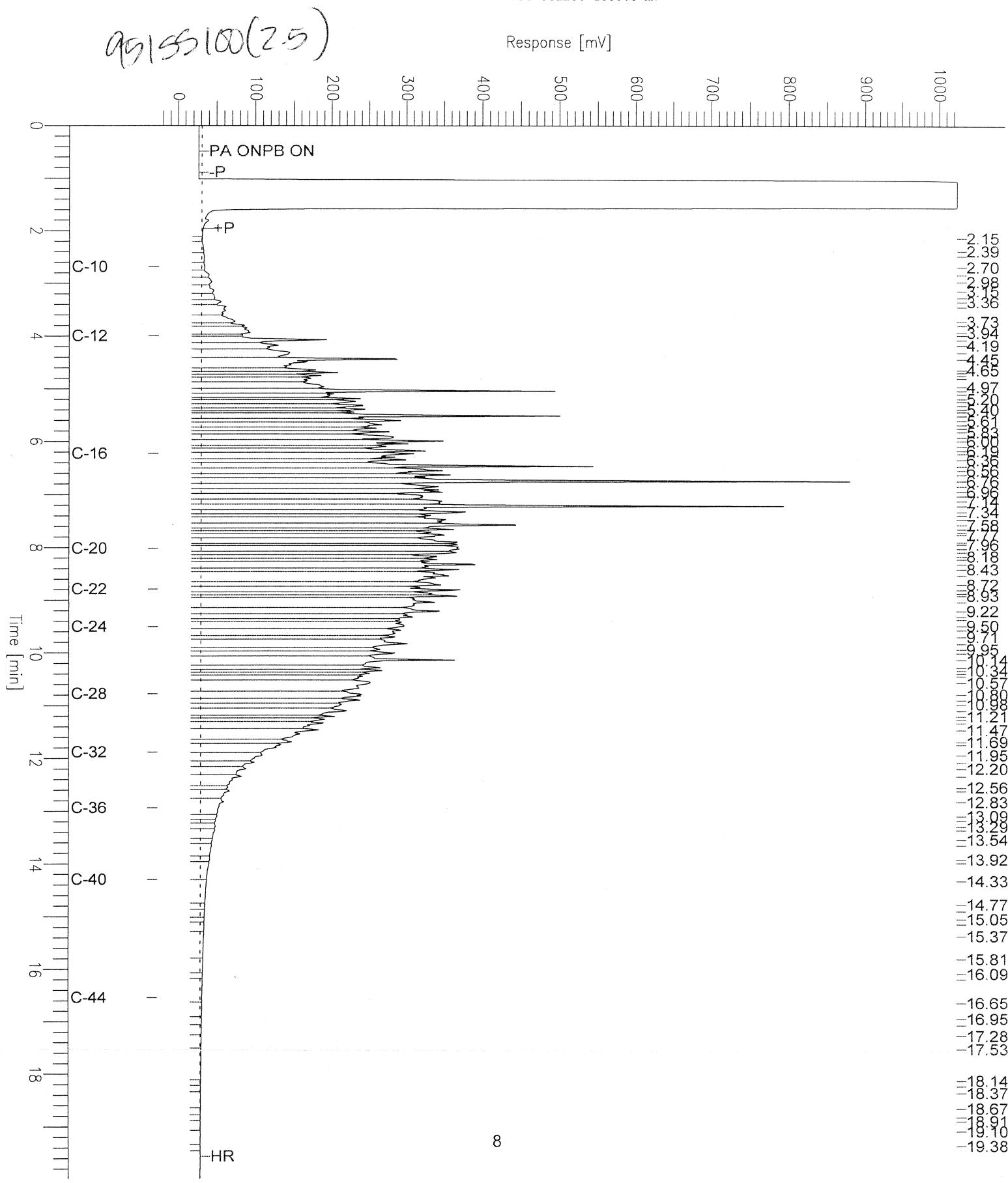
RL= Reporting Limit

Page 1 of 1

Chromatogram

Sample Name : 173495-001sg, 93002
FileName : G:\GC13\CHB\201B063.RAW
Method : BTEH197S.MTH
Start Time : 0.00 min End Time : 19.99 min
Scale Factor: 0.0 Plot Offset: -26 mV

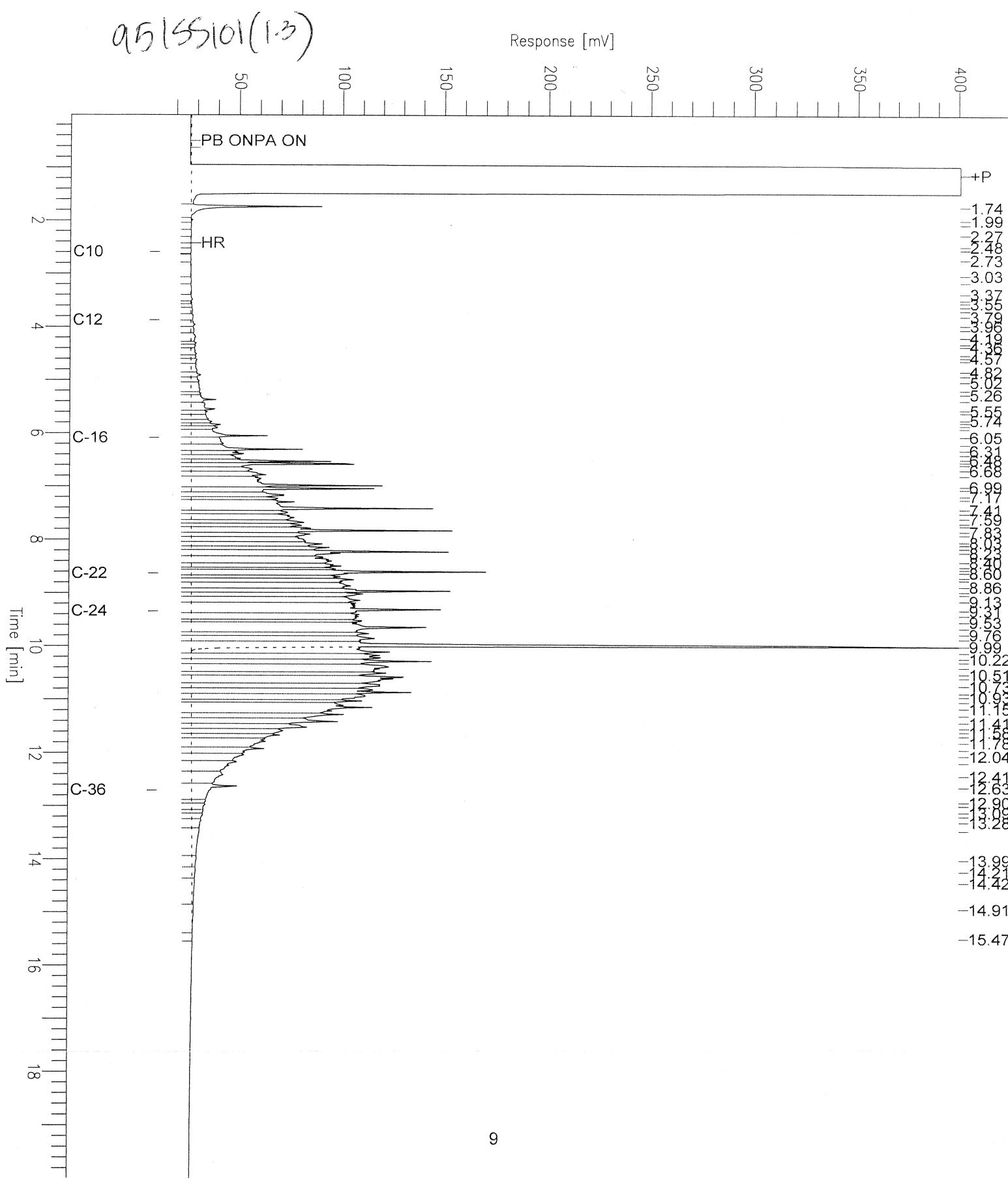
Sample #: 93002 Page 1 of 1
Date : 7/21/04 02:11 PM
Time of Injection: 7/21/04 01:50 PM
Low Point : -25.98 mV High Point : 1024.00 mV
Plot Scale: 1050.0 mV



Chromatogram

Sample Name : 173495-002sg, 93002
 FileName : G:\GC15\CHB\202B029.RAW
 Method : BTEH197S.MTH
 Start Time : 0.01 min End Time : 19.99 min
 Scale Factor: 0.0 Plot Offset: 12 mV

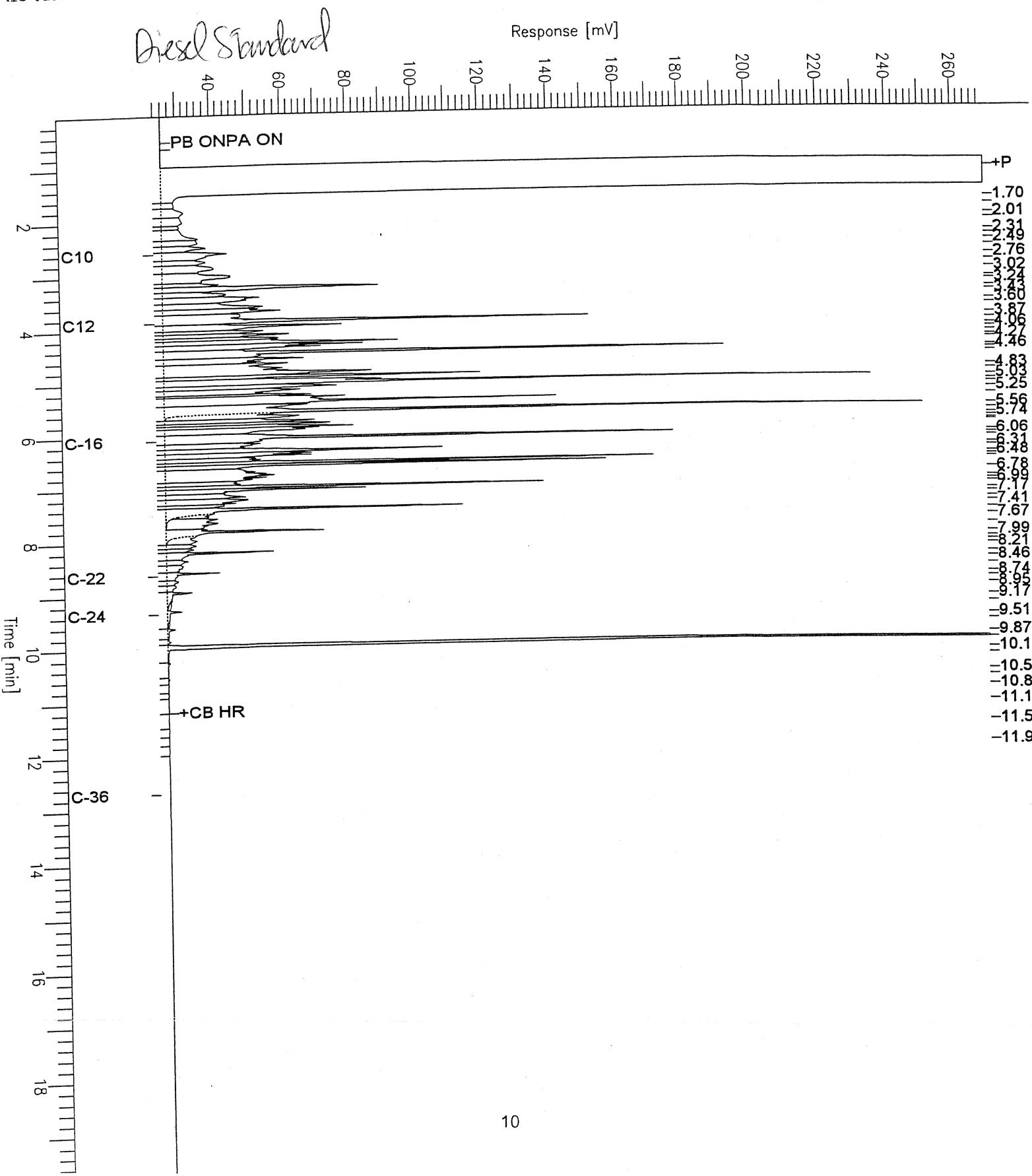
Sample #: 93002 Page 1 of 1
 Date : 7/21/04 09:10 AM
 Time of Injection: 7/21/04 01:06 AM
 Low Point : 11.51 mV High Point : 400.70 mV
 Plot Scale: 389.2 mV



Chromatogram

Sample Name : ccv_04ws1144.dsl
 File Name : G:\GC15\CHB\202B002.RAW
 Method : BTEH197S.MTH
 Start Time : 0.01 min
 File Factor: 0.0
 End Time : 19.99 min
 Plot Offset: 24 mV

Sample #: 500mg/L
 Date : 7/20/04 11:38 AM
 Time of Injection: 7/20/04 10:17 AM
 Low Point : 23.74 mV High Point : 269.60 mV
 Plot Scale: 245.9 mV



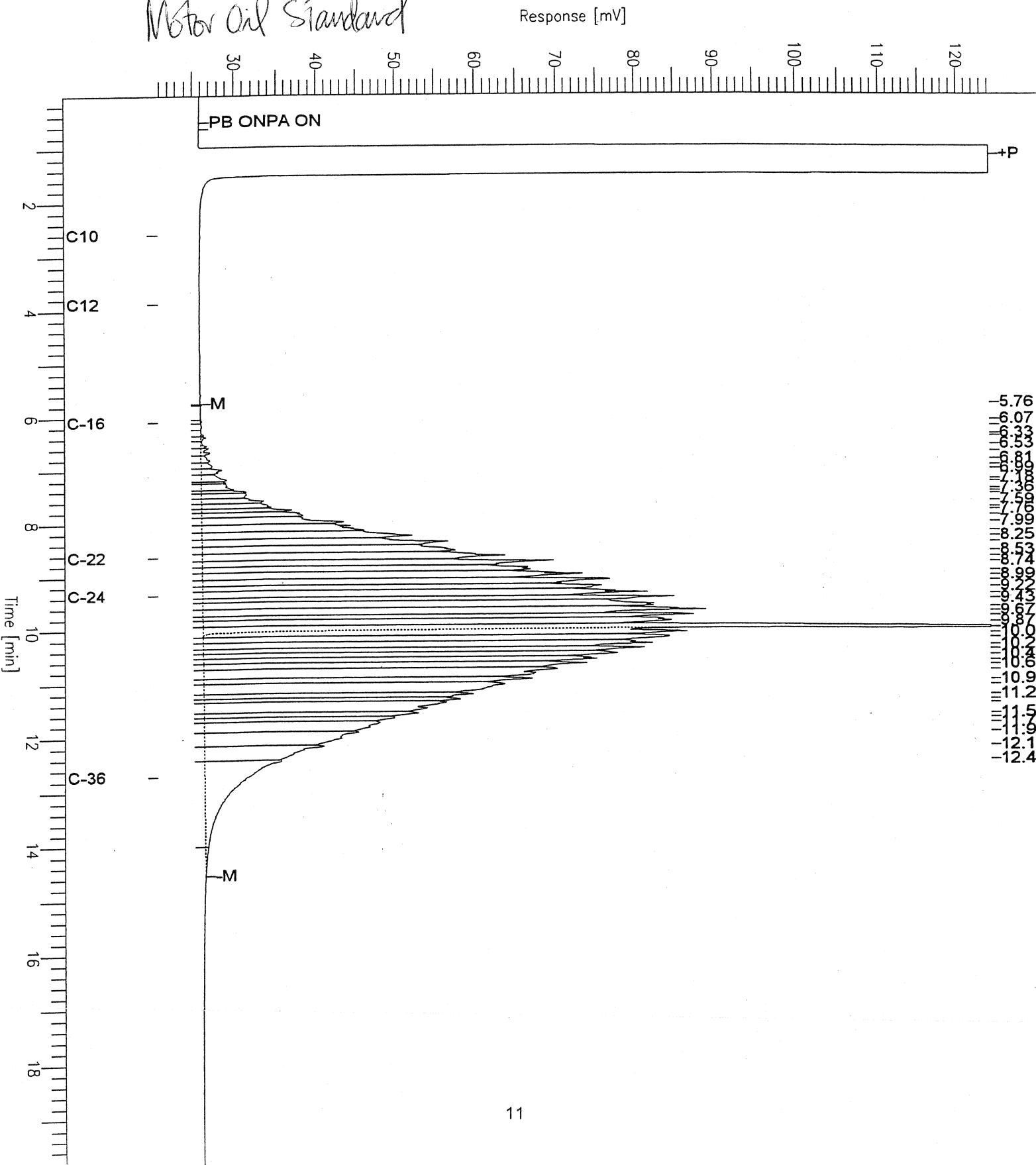
Chromatogram

Sample Name : ccv_04ws1249.mo
File Name : G:\GC15\CHB\202B003.RAW
Method : BTEH197S.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 19.99 min
Plot Offset: 21 mV

Sample #: 500mg/L
Date : 7/20/04 11:39 AM
Time of Injection: 7/20/04 10:46 AM
Low Point : 20.83 mV
High Point : 124.17 mV
Plot Scale: 103.3 mV

Page 1 of 1

Motor Oil Standard



Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	173495	Location:	951 - Hoffman St.
Client:	Presidio Trust	Prep:	SHAKER TABLE
Project#:	2990-CS AREA B	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC258284	Batch#:	93002
Matrix:	Soil	Prepared:	07/20/04
Units:	mg/Kg	Analyzed:	07/21/04
Basis:	as received		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C12-C24	50.39	34.33	68	55-128

Surrogate	%REC	Limits
Hexacosane	68	52-131

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	173495	Location:	951 - Hoffman St.
Client:	Presidio Trust	Prep:	SHAKER TABLE
Project#:	2990-CS AREA B	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	93002
MSS Lab ID:	173501-006	Sampled:	07/19/04
Matrix:	Soil	Received:	07/19/04
Units:	mg/Kg	Prepared:	07/20/04
Basis:	dry	Analyzed:	07/21/04
Diln Fac:	1.000		

Type: MS Moisture: 15%
 Lab ID: QC258285

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C12-C24	2.443	58.33	55.79	91	27-145

Surrogate	%REC	Limits
Hexacosane	86	52-131

Type: MSD Moisture: 15%
 Lab ID: QC258286

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C12-C24	58.72	72.35	119	27-145	25	51

Surrogate	%REC	Limits
Hexacosane	107	52-131

RPD= Relative Percent Difference
 Page 1 of 1

INITIAL CALIBRATION REPORT FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Instrument: GC13B Gas Chromatograph #13 (Channel B) TEH Reviewed By: MMP
Calnum: 144283164001 Name: Diesel Type: (normal) Date: 14-JUL-2004 15:24 Inj Vol (uL): 3

Calibration levels:

#	Filename	Sequence	Samplenum	Analyzed	Standards
1	196b002	144283164002	ds1	14-JUL-2004 15:24	04WS1223
2	196b003	144283164003	ds1	14-JUL-2004 15:52	04WS1222
3	196b004	144283164004	ds1	14-JUL-2004 16:19	04WS1221
4	196b005	144283164005	ds1	14-JUL-2004 16:47	04WS1220
5	196b006	144283164006	ds1	14-JUL-2004 17:15	04WS1219
6	196b007	144283164007	ds1	14-JUL-2004 17:43	04WS1218
7	196b008	144283164008	ds1	14-JUL-2004 18:11	04WS1217

Analyte	L1	L2	L3	L4	L5	L6	L7	Type	X	a0	a1	a2	units	avg	r^2	%RSD	Mtr.2	MRRD Flags
Diesel C10-C22	18229	20894	21463	23037	23389	23428	23106	AVRG	R	4.559E-5			mg/L	21935	9	0.995	20	
Diesel C10-C24	18387	21049	21651	23174	23575	23613	23297	AVRG	R	4.524E-5			mg/L	22106	9	0.995	20	
Diesel C10-C28	18468	21062	21681	23227	23604	23657	23347	AVRG	R	4.515E-5			mg/L	22149	9	0.995	20	
Diesel C10-C20	18229	20171	20991	22394	22733	22787	22462	AVRG	R	4.674E-5			mg/L	21395	8	0.995	20	
Diesel C12-C22	14264	17510	18037	19369	19712	20569	20040	AVRG	R	5.405E-5			mg/L	18500	12	0.995	20	
Diesel C12-C24	14421	17664	18224	19506	19898	20754	20231	AVRG	R	5.356E-5			mg/L	18671	12	0.995	20	
Diesel C12-C28	14502	17677	18254	19559	19927	20798	20281	AVRG	R	5.344E-5			mg/L	18714	12	0.995	20	
Diesel C12-C36	16806	17830	18397	19616	19950	20808	20288	AVRG	R	5.236E-5			mg/L	19099	8	0.995	20	

Curves: AVRG: Average response factor
Instrument amount = a0 + response * a1 + response^2 * a2
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INITIAL CALIBRATION REPORT FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Instrument: GC13B Gas Chromatograph #13 (Channel B) TEH Reviewed By: MMP
Calnum: 144283164002 Name: Motor Oil Type: (normal) Date: 14-JUL-2004 19:07 Inj Vol (uL) : 3

Calibration levels:

#	Filename	Secondum	Sample	Medium	Analyzed	Standards
1	196b010	144283164010	mo		14-JUL-2004 19:07	04WS1208
2	196b011	144283164011	mo		14-JUL-2004 19:34	04WS1209
3	196b012	144283164012	mo		14-JUL-2004 20:02	04WS1210
4	196b013	144283164013	mo		14-JUL-2004 20:30	04WS1211
5	196b014	144283164014	mo		14-JUL-2004 20:57	04WS1212
6	196b015	144283164015	mo		14-JUL-2004 21:25	04WS1012

Analyte	L1	L2	L3	L4	L5	L6	Type	X	a0	a1	a2	units	r^2	%RSD	MnR^2	MnRSD	Flags
Motor Oil C20-C36	21250	24620	24433	22462	19826	16785	AVRG	R	4.638E-5			mg/L	21563	14	0.995	20	
Motor Oil C22-C32	16839	19009	18575	18671	16910	14167	AVRG	R	5.760E-5			mg/L	17362	10	0.995	20	
Motor Oil C22-C36	19267	21640	21533	20167	17509	14690	AVRG	R	5.226E-5			mg/L	19134	14	0.995	20	
Motor Oil C24-C36	15162	17347	17277	15408	13751	11157	AVRG	R	6.659E-5			mg/L	15017	16	0.995	20	

Curves: AVRG: Average response factor
Instrument amount = a0 + response * a1 + response^2 * a2
Page 1 of 1

INITIAL CALIBRATION REPORT FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Instrument: GC13B Gas Chromatograph #13 (Channel B) TEH Reviewed By: MMP
Calnum: 144283164003 Name: Hexacosane Type: (normal) Date: 14-JUL-2004 22:20 Inj Vol (uL) : 3

Calibration levels:

#	Filename	Segment	SampID	Plenum	Analyzed	Standards
1	196b017	144283164017		hex	14-JUL-2004	22:20 04WS0533
2	196b018	144283164018		hex	14-JUL-2004	22:48 04WS0534
3	196b019	144283164019		hex	14-JUL-2004	23:15 04WS0535
4	196b020	144283164020		hex	14-JUL-2004	23:43 04WS0536
5	196b021	144283164021		hex	15-JUL-2004	00:11 04WS0537

Analyte	L1	L2	L3	L4	L5	Type X	a0	a1	a2	units	avg	r^2	%RSD	MnR^2	MnRSD	Flags
Hexacosane	23341	25682	25454	25462	26153	AVRG R	3.965E-5			mg/L	25218	4	0.995	20		

INITIAL CALIBRATION REPORT FOR 173495 TEH Soil
 Curtis & Tompkins Laboratories

Instrument: GC15B Gas Chromatograph #15 (Channel B) TEH Reviewed By: CW
 Calnum: 164283116001 Name: diesel Type: (normal) Date: 14-JUL-2004 15:05 Inj Vol (uL): 3

Calibration levels:

#	Filename	Seqnum	Samplenum	Analyzed	Standards
1	196b002	164283116002	ds1	14-JUL-2004 15:05	04WS1223
2	196b003	164283116003	ds1	14-JUL-2004 15:33	04WS1222
3	196b004	164283116004	ds1	14-JUL-2004 16:02	04WS1221
4	196b005	164283116005	ds1	14-JUL-2004 16:31	04WS1220
5	196b006	164283116006	ds1	14-JUL-2004 17:00	04WS1219
6	196b007	164283116007	ds1	14-JUL-2004 17:29	04WS1218
7	196b008	164283116008	ds1	14-JUL-2004 17:58	04WS1217

Analyte	L1	L2	L3	L4	L5	L6	L7	Type X	a0	a1	a2	units	avg	r^2	%RSD	MnR^2	MnRSD	Flags
Diesel C10-022	18446	21499	20824	20800	22542	21235	21471	AVRG R	4.768E-5			mg/L	20974	6	0.995	20		
Diesel C10-024	18446	21647	20984	20983	22719	21423	21646	AVRG R	4.735E-5			mg/L	21121	6	0.995	20		
Diesel C10-028	18446	21651	21007	21027	22770	21472	21698	AVRG R	4.727E-5			mg/L	21153	6	0.995	20		
Diesel C10-030	18446	20933	20228	20231	21906	20674	20874	AVRG R	4.885E-5			mg/L	20470	5	0.995	20		
Diesel C12-022	15496	18153	17621	17586	19118	18365	18507	AVRG R	5.607E-5			mg/L	17835	6	0.995	20		
Diesel C12-024	15496	18301	17781	17768	19295	18553	18683	AVRG R	5.561E-5			mg/L	17983	7	0.995	20		
Diesel C12-032	15496	18306	17884	17812	19346	18604	18740	AVRG R	5.551E-5			mg/L	18016	7	0.995	20		

Curves: AVRG: Average response factor
 Instrument amount = a0 + response * a1 + response^2 * a2
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INITIAL CALIBRATION REPORT FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Instrument: GC15B Gas Chromatograph #15 (Channel B) TEH Reviewed By: CW
Calnum: 164283116002 Name: motoroil Type: (normal) Date: 14-JUL-2004 18:57 Inj Vol (uL) : 3

Calibration levels:

#	Filename	Seqnum	Sampolenum	Analyzed	Standards
1	196b010	164283116010	mo	14-JUL-2004 18:57	04WS1208
2	196b011	164283116011	mo	14-JUL-2004 19:25	04WS1209
3	196b012	164283116012	mo	14-JUL-2004 19:54	04WS1210
4	196b013	164283116013	mo	14-JUL-2004 20:23	04WS1211
5	196b014	164283116014	mo	14-JUL-2004 20:52	04WS1212

Analyte	L1	L2	L3	L4	L5	Type	X	a0	a1	a2	units	avg	r^2		
													%RSD	MNR^2	MNRSD
Motor Oil C20-C36	17004	19835	19205	17449	15242	AVRG	R	5.631E-5			mg/l	17759	10	0.995	20
Motor Oil C22-C32	14644	16188	16058	15185	13283	AVRG	R	6.635E-5			mg/l	15072	8	0.995	20
Motor Oil C22-C36	14644	17639	16936	15683	13355	AVRG	R	6.389E-5			mg/l	15651	11	0.995	20
Motor Oil C24-C36	11123	14055	13287	12446	10036	AVRG	R	8.204E-5			mg/l	12189	13	0.995	20

Curves: AVRG: Average response factor
Instrument amount = a0 + response * a1 + response^2 * a2
Page 1 of 1

INITIAL CALIBRATION REPORT FOR 173495 TEH Soil
 Curtis & Tompkins Laboratories

Instrument: GC15B Gas Chromatograph #15 (Channel B) TEH Reviewed By: CW
 Calnum: 164283116004 Name: hxcs Type: (normal) Date: 14-JUL-2004 22:18 Inj Vol (uL) : 3

Calibration levels:

#	Filename	Secnum	Sampolenum	Analyzed	Standards
1	196b017	164283116017	hex	14-JUL-2004 22:18	04WS0533
2	196b018	164283116018	hex	14-JUL-2004 22:47	04WS0534
3	196b019	164283116019	hex	14-JUL-2004 23:16	04WS0535
4	196b020	164283116020	hex	14-JUL-2004 23:44	04WS0536
5	196b021	164283116021	hex	15-JUL-2004 00:13	04WS0537

Analyte	L1	L2	L3	L4	L5	Type X	a0	a1	a2	units	avg	r^2	%RSD	MnR^2	NXRSD	Flags
Hexacosane	22104	24448	23772	23458	24259	AVRG R	4.236E-5			mg/L	23609	4	0.995	20		

CONTINUING CALIBRATION SUMMARY FOR 173495 TEH Soil
 Curtis & Tompkins Laboratories

Analyte: Diesel C12-C24

Instid	Ch	Seqnum	Injected	Calnum	Caldate	Avg		SpkAmt	QntAmt	Units	%D	Max	%D	Flags
						RF/CF	RF/CF							
GC13B	B	144290013039	20-JUL-2004 20:29	144283164001	14-JUL-2004	18671	20397	500.00	546.23	mg/L	9	15		
GC13B	B	144290013056	21-JUL-2004 09:58	144283164001	14-JUL-2004	18671	18639	1000.0	998.28	mg/L	0	15		
GC13B	B	144290013064	21-JUL-2004 14:17	144283164001	14-JUL-2004	18671	18957	250.00	253.83	mg/L	2	15		
GC15B	B	164291451022	20-JUL-2004 21:45	164283116001	14-JUL-2004	17983	17422	250.00	242.21	mg/L	-3	15		
GC15B	B	164291451032	21-JUL-2004 02:32	164283116001	14-JUL-2004	17983	17896	500.00	497.60	mg/L	0	15		

CONTINUING CALIBRATION SUMMARY FOR 173495 TEH Soil
 Curtis & Tompkins Laboratories

Analyte: Motor Oil C24-C36

Instid	Ch	Seqnum	Injected	Calnum	Caldate	Avg		SpkAmt	QntAmt	Units	%D	Max %D	Flags
						RF/CF	RF/CF						
GC13B	B	144290013054	21-JUL-2004 03:23	144283164002	14-JUL-2004 15017	14242	500.00	474.21	mg/L	-5	15		
GC13B	B	144290013065	21-JUL-2004 14:45	144283164002	14-JUL-2004 15017	14115	500.00	469.96	mg/L	-6	15		
GC15B	B	164291451023	20-JUL-2004 22:14	164283116002	14-JUL-2004 12189	14076	500.00	577.38	mg/L	15	15		
GC15B	B	164291451033	21-JUL-2004 03:01	164283116002	14-JUL-2004 12189	13023	500.00	534.19	mg/L	7	15		

CONTINUING CALIBRATION SUMMARY FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Analyte: Hexacosane

Instid	Ch	Seqnum	Injected	Calnum	Caldate	Avg		SpkAmt	QntAmt	Units	%D	Max %D	Flags
						RF/CF	RF/CF						
GC13B	B	144290013039	20-JUL-2004 20:29	144283164003	14-JUL-2004	25218	24979	50.000	49.525	mg/L	-1	15	
GC13B	B	144290013054	21-JUL-2004 03:23	144283164003	14-JUL-2004	25218	25405	50.000	50.370	mg/L	1	15	
GC13B	B	144290013064	21-JUL-2004 14:17	144283164003	14-JUL-2004	25218	24036	50.000	47.656	mg/L	-5	15	
GC15B	B	164291451022	20-JUL-2004 21:45	164283116004	14-JUL-2004	23609	22147	50.000	46.904	mg/L	-6	15	
GC15B	B	164291451032	21-JUL-2004 02:32	164283116004	14-JUL-2004	23609	23090	50.000	48.902	mg/L	-2	15	

SEQUENCE SUMMARY FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Sequence: 144283164 Instrument: GC13B Gas Chromatograph #13 (Channel B) TEH
Analytical Method: EPA 8015B SOP Version: TEH_rv11 Begun: 14-JUL-2004

#	Filename	Type	Samplenum	Batch Matrix Analyzed	IDF	TOC SPK uL	VL pH	Stds Used	>LR
001	196b001	X	ib		14-JUL-2004	14:56	1.0		
002	196b002	ICAL	ds1		14-JUL-2004	15:24	1.0		1
003	196b003	ICAL	ds1		14-JUL-2004	15:52	1.0		2
004	196b004	ICAL	ds1		14-JUL-2004	16:19	1.0		3
005	196b005	ICAL	ds1		14-JUL-2004	16:47	1.0		4
006	196b006	ICAL	ds1		14-JUL-2004	17:15	1.0		5
007	196b007	ICAL	ds1		14-JUL-2004	17:43	1.0		6
008	196b008	ICAL	ds1		14-JUL-2004	18:11	1.0		7
009	196b009	X	ib		14-JUL-2004	18:39	1.0		
010	196b010	ICAL	mo		14-JUL-2004	19:07	1.0		8
011	196b011	ICAL	mo		14-JUL-2004	19:34	1.0		9
012	196b012	ICAL	mo		14-JUL-2004	20:02	1.0		10
013	196b013	ICAL	mo		14-JUL-2004	20:30	1.0		11
014	196b014	ICAL	mo		14-JUL-2004	20:57	1.0		12
015	196b015	ICAL	mo		14-JUL-2004	21:25	1.0		13
016	196b016	X	ib		14-JUL-2004	21:53	1.0		
017	196b017	ICAL	hex		14-JUL-2004	22:20	1.0		14
018	196b018	ICAL	hex		14-JUL-2004	22:48	1.0		15
019	196b019	ICAL	hex		14-JUL-2004	23:15	1.0		16
020	196b020	ICAL	hex		14-JUL-2004	23:43	1.0		17
021	196b021	ICAL	hex		15-JUL-2004	00:11	1.0		18
022	196b022	X	ib		15-JUL-2004	00:38	1.0		
023	196b023	X	c10-16		15-JUL-2004	01:06	1.0		
024	196b024	X	c12-60		15-JUL-2004	01:33	1.0		
025	196b025	X	c50		15-JUL-2004	02:01	1.0		
026	196b026	X	ib		15-JUL-2004	02:28	1.0		
027	196b027	ICV	ds1		15-JUL-2004	02:56	1.0		
028	196b028	CCV	ds1		15-JUL-2004	03:24	1.0	3	19
029	196b029	CCV	mo		15-JUL-2004	03:51	1.0	3	20
									21

Stds used: 1=04WS1223 2=04WS1222 3=04WS1221 4=04WS1220 5=04WS1219 6=04WS1218 7=04WS1208 8=04WS1209 9=04WS1211 10=04WS1210 11=04WS1212 12=04WS1211 13=04WS1212 14=04WS0533
15=04WS0534 16=04WS0535 17=04WS0536 18=04WS0537 19=04WS0983 20=04WS1144 21=04WS1249

SEQUENCE SUMMARY FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Sequence: 164283116 Instrument: GC15B Gas Chromatograph #15 (Channel B) TEH Begun: 14-JUL-2004
Analytical Method: EPA 8015B SOP Version: TEH_rv11

#	Filename	Type	Samplenum	Batch	Matrix Analyzed	IDF	IOC	SPK	uL	VL	pH	Stds	Used	>LR
001	196b001	X	ib			14-JUL-2004	14:36	1.0						1
002	196b002	ICAL	ds1			14-JUL-2004	15:05	1.0						2
003	196b003	ICAL	ds1			14-JUL-2004	15:33	1.0						3
004	196b004	ICAL	ds1			14-JUL-2004	16:02	1.0						4
005	196b005	ICAL	ds1			14-JUL-2004	16:31	1.0						5
006	196b006	ICAL	ds1			14-JUL-2004	17:00	1.0						6
007	196b007	ICAL	ds1			14-JUL-2004	17:29	1.0						7
008	196b008	ICAL	ds1			14-JUL-2004	17:58	1.0						8
009	196b009	X	ib			14-JUL-2004	18:28	1.0						9
010	196b010	ICAL	mo			14-JUL-2004	18:57	1.0						10
011	196b011	ICAL	mo			14-JUL-2004	19:25	1.0						11
012	196b012	ICAL	mo			14-JUL-2004	19:54	1.0						12
013	196b013	ICAL	mo			14-JUL-2004	20:23	1.0						13
014	196b014	ICAL	mo			14-JUL-2004	20:52	1.0						14
015	196b015	ICAL	mo			14-JUL-2004	21:21	1.0						15
016	196b016	X	ib			14-JUL-2004	21:50	1.0						16
017	196b017	ICAL	hex			14-JUL-2004	22:18	1.0						17
018	196b018	ICAL	hex			14-JUL-2004	22:47	1.0						18
019	196b019	ICAL	hex			14-JUL-2004	23:16	1.0						19
020	196b020	ICAL	hex			14-JUL-2004	23:44	1.0						20
021	196b021	ICAL	hex			15-JUL-2004	00:13	1.0						21
022	196b022	X	ib			15-JUL-2004	00:42	1.0						22
023	196b023	ICAL	jp5			15-JUL-2004	01:10	1.0						23
024	196b024	ICAL	jp5			15-JUL-2004	01:39	1.0						24
025	196b025	ICAL	jp5			15-JUL-2004	02:08	1.0						25
026	196b026	ICAL	jp5			15-JUL-2004	02:36	1.0						26
027	196b027	ICAL	jp5			15-JUL-2004	03:05	1.0						27
028	196b028	X	ib			15-JUL-2004	03:34	1.0						28
029	196b029	X	c12-16			15-JUL-2004	04:02	1.0						29
030	196b030	X	c12-60			15-JUL-2004	04:31	1.0						30

Stds used: 1=04WS1223 2=04WS1222 3=04WS1221 4=04WS1220 5=04WS1219 6=04WS1218 7=04WS1209 9=04WS1208 10=04WS1210 11=04WS1211 12=04WS1212 13=04WS1012 14=04WS0533
15=04WS0534 16=04WS0535 17=04WS0536 18=04WS0537 19=04WS0573 20=04WS0572 21=04WS0574 22=04WS0575 23=04WS0576 24=04WS0577 25=04WS0983 26=04WS0578 27=04WS1249 28=04WS0513

SEQUENCE SUMMARY FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Sequence: 164283116 Instrument: GC15B
Analytical Method: EPA 8015B

Gas Chromatograph #15 (Channel B) TEH
SOP Version: TEH_rv11 Begun: 14-JUL-2004

#	Filename	Type	Samplenum	Batch Matrix Analyzed	IDF	IQC SPK uL	VL pH Stds Used	>LR
031	196b031	X	c50	15-JUL-2004	04:59	1.0		
032	196b032	X	ib	15-JUL-2004	05:28	1.0		
033	196b033	ICV	ds1	15-JUL-2004	05:57	1.0		
034	196b034	X	ib	15-JUL-2004	06:25	1.0		24
035	196b035	CCV	ds1	15-JUL-2004	06:54	1.0		
036	196b036	X	ib	15-JUL-2004	07:22	1.0		
037	196b037	CCV	mo	15-JUL-2004	07:51	1.0		
038	196b038	X	ib	15-JUL-2004	08:20	1.0		26
039	196b039	CCV	ip5	15-JUL-2004	08:48	1.0		
						3		27

SEQUENCE SUMMARY FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Sequence: 144290013 Instrument: GC13B
Analytical Method: EPA 8015B

Gas Chromatograph #13 (Channel B) TEH
SOP Version: TEH_rv11

Begun: 19-JUL-2004

#	Filename	Type	Samplenum	Batch Matrix Analyzed	IDF	PDF	IOC SPK uL	Stds Used	>LR
001	201b001	X	ib	19-JUL-2004	09:33	1.0			3
002	201b002	CCV	dsl	19-JUL-2004	11:04	1.0	1.0		1
003	201b003	CCV	mo	19-JUL-2004	11:32	1.0	1.0		2
004	201b004	CCV	jet	19-JUL-2004	12:04	1.0	1.0		3
005	201b005	BLANK	QC258036 S	92930 Water	19-JUL-2004	12:42	1.0	0.005	6
006	201b006	SAMPLE	173474-001 S	92930 Water	19-JUL-2004	13:09	1.0	0.005	3
007	201b007	X	QC258117	92956 Soil	19-JUL-2004	19:35	1.0	0.1006	3
008	201b008	SAMPLE	173475-004	92956 Soil	19-JUL-2004	20:03	1.0	0.1003	3
009	201b009	SAMPLE	173475-003	92956 Soil	19-JUL-2004	20:30	1.0	0.1003	3
010	201b010	SAMPLE	173475-005	92956 Soil	19-JUL-2004	20:58	1.0	0.09962	3
011	201b011	MSS	173475-001	92956 Soil	19-JUL-2004	21:25	1.0	0.1004	6
012	201b012	LCS	QC258118	92956 Soil	19-JUL-2004	21:53	1.0	0.09978	3
013	201b013	MS	QC258119	92956 Soil	19-JUL-2004	22:21	1.0	0.1003	3
014	201b014	MSD	QC258120	92956 Soil	19-JUL-2004	22:48	1.0	0.09996	2
015	201b015	X	ccv		19-JUL-2004	23:16	1.0		3
016	201b016	CCV	dsl		19-JUL-2004	23:43	1.0		4
017	201b017	CCV	mo		20-JUL-2004	00:11	1.0	1.0	3
018	201b018	CCV	jet		20-JUL-2004	00:39	1.0	1.0	3
019	201b019	SAMPLE	173475-002	92956 Soil	20-JUL-2004	01:06	1.0	0.09903	3
020	201b020	SAMPLE	173475-006	92956 Soil	20-JUL-2004	01:34	1.0	0.09988	3
021	201b021	SAMPLE	173475-007	92956 Soil	20-JUL-2004	02:02	1.0	0.09974	3
022	201b022	SAMPLE	173475-008	92956 Soil	20-JUL-2004	02:29	1.0	0.1002	3
023	201b023	X	ccv		20-JUL-2004	02:57	1.0		5
024	201b024	CCV	dsl		20-JUL-2004	03:25	1.0	1.0	3
025	201b025	CCV	mo		20-JUL-2004	03:52	1.0	1.0	2
026	201b026	X	ib		20-JUL-2004	09:43	1.0		3
027	201b027	CCV	jet		20-JUL-2004	10:24	1.0	1.0	3
028	201b028	BLANK	QC258195 S	92978 Water	20-JUL-2004	11:02	1.0	0.005	6
029	201b029	SAMPLE	173503-001 S	92978 Water	20-JUL-2004	11:30	1.0	0.005	3
030	201b030	SAMPLE	173503-002 S	92978 Water	20-JUL-2004	11:57	1.0	0.005	3
031	201b031	SAMPLE	173503-003 S	92978 Water	20-JUL-2004	12:25	1.0	0.005	3

Stds used: 1=04WS1144 2=04WS1249 3=04WS1241 4=04WS1011 5=04WS1277 6=04WS1219

SEQUENCE SUMMARY FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Sequence: 144290013 Instrument: GC13B Gas Chromatograph #13 (Channel B) TEH Begun: 19-JUL-2004
Analytical Method: EPA 8015B SOP Version: TEH_rv11

#	Filename	Type	Samplenum	Batch	Matrix Analyzed	IDF	PDF	TOC	SPK	UL	Stds Used	>LR	
032	201b032	SAMPLE	173480-005	92956	Soil	20-JUL-2004	17:14	1.0	0.1003	3			
033	201b033	SAMPLE	173463-001	92956	Soil	20-JUL-2004	17:42	25.0	0.1001	3			
034	201b034	SAMPLE	173463-002	92956	Soil	20-JUL-2004	18:10	50.0	0.0994	3			
035	201b035	SAMPLE	173463-005	92956	Soil	20-JUL-2004	18:38	25.0	0.1002	3			
036	201b036	SAMPLE	173463-003	92956	Soil	20-JUL-2004	19:06	50.0	0.1008	3			
037	201b037	SAMPLE	173463-006	92956	Soil	20-JUL-2004	19:33	25.0	0.09946	3			
038	201b038	X	CCV			20-JUL-2004	20:01	1.0		1			
039	201b039	— CCV	ds1			20-JUL-2004	20:29	1.0	1.0	1			
040	201b040	CCV	mo			20-JUL-2004	20:56	1.0	1.0	2			
041	201b041	CCV	jet			20-JUL-2004	21:24	1.0	1.0	3			
042	201b042	SAMPLE	173476-001	S	92956	Soil	20-JUL-2004	21:51	1.0	0.09968	3		
043	201b043	SAMPLE	173476-002	S	92956	Soil	20-JUL-2004	22:19	1.0	0.1004	3		
044	201b044	SAMPLE	173463-004	92956	Soil	20-JUL-2004	22:47	25.0	0.09974	3			
045	201b045	SAMPLE	173501-004	93002	Soil	20-JUL-2004	23:14	1.0	0.1001	3			
046	201b046	SAMPLE	173501-005	93002	Soil	20-JUL-2004	23:42	1.0	0.09946	3			
047	201b047	SAMPLE	173501-001	93002	Soil	21-JUL-2004	00:09	1.0	0.1004	3			
048	201b048	SAMPLE	173501-003	93002	Soil	21-JUL-2004	00:37	1.0	0.09913	3			
049	201b049	SAMPLE	173472-001	93002	Miscel	21-JUL-2004	01:05	100.0	0.3998	3			
050	201b050	MS	QC258285	93002	Soil	21-JUL-2004	01:32	1.0	0.09917	3			
051	201b051	MSD	QC258286	93002	Soil	21-JUL-2004	02:00	1.0	0.09982	3			
052	201b052	X	ds1			21-JUL-2004	02:28	1.0	1.0	3			
053	201b053	X	ds1			21-JUL-2004	02:55	1.0	1.0	3			
054	201b054	— CCV	mo			21-JUL-2004	03:23	1.0	1.0	3			
055	201b055	X	ib			21-JUL-2004	09:29	1.0		2			
056	201b056	— CCV	ds1			21-JUL-2004	09:58	1.0	1.0	3			
057	201b057	CCV	jet			21-JUL-2004	10:26	1.0	1.0	3			
058	201b058	BLANK	QC258368	S	93024	Water	21-JUL-2004	11:00	1.0	0.005	6		
059	201b059	SAMPLE	173523-001	S	93024	Water	21-JUL-2004	11:28	1.0	0.005	3		
060	201b060	SAMPLE	173523-002	S	93024	Water	21-JUL-2004	11:55	1.0	0.005	3		
061	201b061	SAMPLE	173523-003	S	93024	Water	21-JUL-2004	12:23	1.0	0.005	3		
062	201b062	SAMPLE	173501-003	93002	Soil	21-JUL-2004	13:22	3.0	0.09913	3			

Stds used: 1=04WS1144 2=04WS1249 3=04WS1241 4=04WS1011 5=04WS1277 6=04WS1219

SEQUENCE SUMMARY FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Sequence: 144290013 Instrument: GC13B Gas Chromatograph #13 (Channel B) TEH Begun: 19-JUL-2004
Analytical Method: EPA 8015B SOP Version: TEH_rv11

#	Filename	Type	Samplenum	Batch	Matrix	Analyzed	IDF	PDF	IOC	SPK	uL	Stds	Used	>LR
063	201b063	SAMPLE	173495-001	S 93002	Soil	21-JUL-2004	13:50	5.0	0.0997		3			1:DSL:12=5346.50
064	201b064	CCV	ds1			21-JUL-2004	14:17	1.0		1.0	3	5		
065	201b065	CCV	mo			21-JUL-2004	14:45	1.0		1.0	3	2		

SEQUENCE SUMMARY FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Sequence: 164291451 Instrument: GC15B Gas Chromatograph #15 (Channel B) TEH Begun: 20-JUL-2004
Analytical Method: EPA 8015B SOP Version: TEH_rv11

#	Filename	Type	Samplenum	Batch Matrix Analyzed	IDF	PDF	IOC SPK uL	Stds Used	>LR
001	202b001	X	ib	20-JUL-2004	09:31	1.0			
002	202b002	CCV	dsl	20-JUL-2004	10:17	1.0	1.0		1
003	202b003	CCV	mo	20-JUL-2004	10:46	1.0	1.0		2
004	202b004	BS	QC258196 S	92978 Water	20-JUL-2004	11:52	1.0	0.005	3
005	202b005	BSD	QC258197 S	92978 Water	20-JUL-2004	12:21	1.0	0.005	3
006	202b006	X	ib	20-JUL-2004	12:50	1.0			
007	202b007	BLANK	QC258117 S	92956 Soil	20-JUL-2004	13:19	1.0	0.1006	6
008	202b008	LCS	QC258118 S	92956 Soil	20-JUL-2004	13:47	1.0	0.09978	3
009	202b009	CCV	dsl	20-JUL-2004	14:57	1.0	1.0		3
010	202b010	CCV	mo	20-JUL-2004	15:26	1.0	1.0		2
011	202b011	BLANK	QC257943 S	92906 Water	20-JUL-2004	16:28	1.0	0.005	6
012	202b012	SAMPLE	173440-003 S	92906 Water	20-JUL-2004	16:57	1.0	0.005	3
013	202b013	SAMPLE	173440-002 S	92906 Water	20-JUL-2004	17:26	1.0	0.005	3
014	202b014	SAMPLE	173448-001 S	92906 Water	20-JUL-2004	17:55	1.0	0.005	3
015	202b015	SAMPLE	173448-003 S	92906 Water	20-JUL-2004	18:24	1.0	0.005	3
016	202b016	SAMPLE	173440-001 S	92906 Water	20-JUL-2004	18:53	1.0	0.005	3
017	202b017	SAMPLE	173440-004 S	92906 Water	20-JUL-2004	19:22	1.0	0.005	3
018	202b018	SAMPLE	173480-010 S	92956 Soil	20-JUL-2004	19:51	1.0	0.1003	3
019	202b019	BS	QC257944 S	92906 Water	20-JUL-2004	20:19	1.0	0.005	3
020	202b020	BSD	QC257945 S	92906 Water	20-JUL-2004	20:48	1.0	0.005	3
021	202b021	X	ccv	20-JUL-2004	21:17	1.0			4
022	202b022	-CCV	dsl	20-JUL-2004	21:45	1.0	1.0		4
023	202b023	-CCV	mo	20-JUL-2004	22:14	1.0	1.0		2
024	202b024	BLANK	QC258283 S	93002 Soil	20-JUL-2004	22:43	1.0	0.0996	6
025	202b025	SAMPLE	173450-002 S	93002 Soil	20-JUL-2004	23:11	2.0	0.09917	3
026	202b026	MSS	173501-006 S	93002 Soil	20-JUL-2004	23:40	1.0	0.09936	6
027	202b027	SAMPLE	173421-001 S	92906 Water	21-JUL-2004	00:09	1.0	0.005	3
028	202b028	SAMPLE	173495-001 S	93002 Soil	21-JUL-2004	00:38	2.0	0.0997	2
029	202b029	SAMPLE	173495-002 S	93002 Soil	21-JUL-2004	01:06	1.0	0.1006	3
030	202b030	LCS	QC258284 S	93002 Soil	21-JUL-2004	01:35	1.0	0.1008	3
031	202b031	X	ccv	21-JUL-2004	02:04	1.0			1

Stds used: 1=04WS1144 2=04WS1249 3=04WS1011 4=04WS1277

SEQUENCE SUMMARY FOR 173495 TEH Soil
Curtis & Tompkins Laboratories

Sequence: 164291451 Instrument: GC15B Gas Chromatograph #15 (Channel B) TEH Begun: 20-JUL-2004
Analytical Method: EPA 8015B SOP Version: TEH_rv11

#	Filename	Type	Samplenum	Batch Matrix Analyzed	IDF	PDF	IOC	SPK uL	Stds Used	>LR
032	202b032	CCV	ds1	21-JUL-2004	02:32	1.0	1.0	3	1	
033	202b033	CCV	mo	21-JUL-2004	03:01	1.0	1.0	3	2	

Curtis & Tompkins Laboratories

Sample Preparation Summary 20-JUL-2004 18:04

Batch Number : 93002
 Date Extracted: 20-JUL-2004
 Extracted by : Sharon L. Karagozlu
 Prep Method : SHAKER TABLE

Analysis : TEH
 Bgroup : N/A
 Units : g
 Clean-up :

Spike #1 ID : 04WS1161D
 Spike #2 ID : 04WS1189D
 Spike #3 ID :
 SOP Version : TEH1_rv9

Sample	Type	Client	Matrix	Unit	Final Vol	Prep D.F.	Clean Vol	pH	Sp. 1 Vol	Sp. 2 Vol	Sp. 3 Analyses	Comments
173450-002		URS Corporation	Soil	/ 50.42 g	5	0.099767	1	0				TEH
173472-001		MWH	Miscell.	/ 50.03 g	20	0.399760	1	1	0			TEH
173495-001		Presidio Trust	Soil	/ 50.15 g	5	0.099701	1	1	0			TEH
173495-002		Presidio Trust	Soil	/ 49.69 g	5	0.100624	1	1	0			TEH
173501-001		Innovative Technical Solutions	Soil	/ 49.79 g	5	0.100422	1	1	0			TEH
173501-003		Innovative Technical Solutions	Soil	/ 50.44 g	5	0.099128	1	1	0			TEH
173501-004		Innovative Technical Solutions	Soil	/ 49.95 g	5	0.100100	1	1	0			TEH
173501-005		Innovative Technical Solutions	Soil	/ 50.27 g	5	0.099463	1	1	0			TEH
173501-006		Innovative Technical Solutions	Soil	/ 50.32 g	5	0.099364	1	1	0			TEH
QC258283	MB	LCS	Soil	/ 50.2 g	5	0.099602	1	1	0			TEH
QC258284	MS	of 173501-006	Soil	/ 49.61 g	5	0.100786	1	1	1			TEH
QC258285	MS	of 173501-006	Soil	/ 50.42 g	5	0.099167	1	1	1			TEH
QC258286	MSD		Soil	/ 50.09 g	5	0.099820	1	1	1			TEH

Prep Chemist: J. S. G.Relinquished By: J. S. G.

Reviewed By:

Challenger: J. S. G.
 Date: 7.20.04

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LIMS Batch No: 93002
 LIMS Analysis TEHT
 Extracted by: SLK
 Date Extracted: 7/20/04

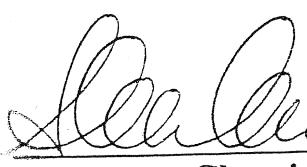
Extraction Method:
 Mechanical Shaker Table
 EPA 3550 Sonication
 Other _____

Cleanup Method (if necessary):
 EPA 3630 Silica Gel
 Other _____

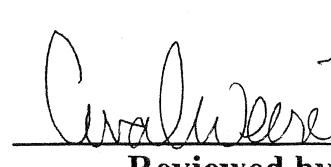
Sample # & letter	Weight of Sample (g)	Final Volume (mL)	Cleanup (x if needed)	Comments
MB QC258283	50.20	5.0	X	
US 4	49.61		↓	
MS 5	50.42			173501-006
MSD 6	50.09			↓
173450-002	50.42	↓	X	Aliased 173450-001
173472-001	50.03	20.0		
173495-001	50.15	5.0	X	
↓ -002	49.69	1	↓	
173501-001	49.79			
-003	50.44			
-004	49.95			
-005	50.27			
↓ -006	50.32	↓		mss
15				
20				

Mfg & Lot # / LIMS # / Time	Date/Initials
EM 43310410	SLK 7/20/04
JTB A17 H50	
04WS1161 D	
04WS1189 D	
EM 44161	
EM 44085	
1345	
1545	
SLK 7/20/04 EM 4404410	
✓	

Sand weighed out for QC samples
 Samples were dried with CH₂Cl₂-rinsed ^{powdered} granular Na₂SO₄
 1.0 mL of TEH_SURR surrogate solution was added to all samples
 1.0 mL of TEH_SP matrix spiking solution was added to all spikes
 ≥ 75 mL of 1+1 (CH₂Cl₂+Acetone) was added to all
 Samples were: sonicated 3 times placed on shaker table at:
 taken off shaker table at:
 Extracts filtered through baked, rinsed ^{powdered} Na₂SO₄
 Concentrated to volumes as noted above

 7/20/04

Continued from page 32
 Continued on page

 7/20/04
 Reviewed by / Date

Prep Chemist: SJK
 Cleanup Date: 7/20/04

Benchbook # BK 1952
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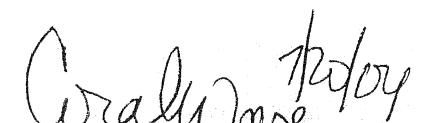
Sample #	Batch#	Initial Volume (mL)	Final Volume (mL)	Comments
M3 QC 5/28/03	93003	1.0	1.0	
CCS ↓ 4				
173450-002				
173495-001				
5 ↓ -002				
10				
15				
20				
25				
30				

- Extracts were cleaned up using C&T assembled ____ g columns
 Extracts were cleaned up using 1.0 g cartridges
 Extracts were eluted with 20 mL CH₂Cl₂
 Concentrated to volumes as noted above

Mfg & Lot # / Time / Program	Initials / Date
N/1	SJK 7/20/04
SP 3127	
EM 44161	


 7/20/04
 Extraction Chemist / Date

Continued from page 33
 Continued on page 33


 7/20/04
 Reviewed by / Date

PROJECT SOIL ALiquot

Notebook No. BK 1964

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Continued From Page

<u>SAMPLE ID</u>	<u>WEIGHT</u>	<u>ANALYSIS</u>	<u>COMMENTS</u>
173450 -002	50.42	TEH	RJS 7/20 AUXS01 450-1 COMP(A-D)
173472 -001B	50.03		
173495 -001A	50.15		
002	49.69		
173501 -001	49.79		
003	50.44		
004	49.95		
005	50.27		
006	50.32		MSS
MB	50.20		EM43310410
LCS	-		↓
MS	50.42		17350 -006A
MSD	50.09		↓

RJS 7/20/09

Continued on Page

Read and Understood By

Signed

Date 7/20/04

Signed

Date

VOCs results & QC Summary

Purgeable Aromatics by GC/MS

Lab #:	173495	Location:	951 - Hoffman St.
Client:	Presidio Trust	Prep:	EPA 5030B
Project#:	2990-CS AREA B	Analysis:	EPA 8260B
Field ID:	951SS100 [2.5]	Diln Fac:	0.9615
Lab ID:	173495-001	Batch#:	92984
Matrix:	Soil	Sampled:	07/16/04
Units:	ug/Kg	Received:	07/19/04
Basis:	dry	Analyzed:	07/20/04

Moisture: 23%

Analyte	Result	RL
MTBE	ND	6.2
Benzene	ND	6.2
Toluene	ND	6.2
Ethylbenzene	ND	6.2
m,p-Xylenes	ND	6.2
o-Xylene	ND	6.2

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	80-120
Toluene-d8	97	80-120
Bromofluorobenzene	94	80-123

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Purgeable Aromatics by GC/MS

Lab #:	173495	Location:	951 - Hoffman St.
Client:	Presidio Trust	Prep:	EPA 5030B
Project#:	2990-CS AREA B	Analysis:	EPA 8260B
Field ID:	951SS101[1.3]	Diln Fac:	0.9259
Lab ID:	173495-002	Batch#:	92984
Matrix:	Soil	Sampled:	07/16/04
Units:	ug/Kg	Received:	07/19/04
Basis:	dry	Analyzed:	07/20/04

Moisture: 18%

Analyte	Result	RL
MTBE	ND	5.6
Benzene	ND	5.6
Toluene	ND	5.6
Ethylbenzene	ND	5.6
m,p-Xylenes	ND	5.6
o-Xylene	ND	5.6

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	97	80-120
Toluene-d8	96	80-120
Bromofluorobenzene	97	80-123

ND= Not Detected

RL= Reporting Limit

Page 1 of 1

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	173495	Location:	951 - Hoffman St.
Client:	Presidio Trust	Prep:	EPA 5030B
Project#:	2990-CS AREA B	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC258216	Diln Fac:	1.000
Matrix:	Soil	Batch#:	92984
Units:	ug/Kg	Analyzed:	07/20/04

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	80-120
Toluene-d8	98	80-120
Bromofluorobenzene	95	80-123

ND= Not Detected

RL= Reporting Limit

Page 1 of 1

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	173495	Location:	951 - Hoffman St.
Client:	Presidio Trust	Prep:	EPA 5030B
Project#:	2990-CS AREA B	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC258217	Diln Fac:	1.000
Matrix:	Soil	Batch#:	92984
Units:	ug/Kg	Analyzed:	07/20/04

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	96	80-120
Toluene-d8	96	80-120
Bromofluorobenzene	95	80-123

ND= Not Detected

RL= Reporting Limit

Page 1 of 1

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	173495	Location:	951 - Hoffman St.
Client:	Presidio Trust	Prep:	EPA 5030B
Project#:	2990-CS AREA B	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC258215	Diln Fac:	1.000
Matrix:	Soil	Batch#:	92984
Units:	ug/Kg	Analyzed:	07/20/04

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	47.31	95	74-120
Benzene	50.00	48.40	97	80-120
Toluene	50.00	47.92	96	80-120
Ethylbenzene	50.00	47.96	96	80-120
m,p-Xylenes	100.0	96.95	97	80-120
o-Xylene	50.00	49.31	99	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	99	80-120
Toluene-d8	96	80-120
Bromofluorobenzene	94	80-123



Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	173495	Location:	951 - Hoffman St.
Client:	Presidio Trust	Prep:	EPA 5030B
Project#:	2990-CS AREA B	Analysis:	EPA 8260B
Field ID:	951SS101[1.3]	Diln Fac:	0.9259
MSS Lab ID:	173495-002	Batch#:	92984
Matrix:	Soil	Sampled:	07/16/04
Units:	ug/Kg	Received:	07/19/04
Basis:	dry	Analyzed:	07/20/04

Type: MS Moisture: 18%
Lab ID: QC258258

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.1341	56.46	51.00	90	66-120
Benzene	<0.06220	56.46	51.48	91	67-120
Toluene	<0.1463	56.46	50.59	90	61-120
Ethylbenzene	<0.07317	56.46	50.19	89	58-120
m,p-Xylenes	<0.1951	112.9	102.3	91	54-122
o-Xylene	<0.1037	56.46	50.27	89	57-121

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	100	80-120
Toluene-d8	97	80-120
Bromofluorobenzene	94	80-123

Type: MSD Moisture: 18%
Lab ID: QC258259

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	56.46	50.68	90	66-120	1	20
Benzene	56.46	50.93	90	67-120	1	20
Toluene	56.46	51.27	91	61-120	1	20
Ethylbenzene	56.46	51.06	90	58-120	2	20
m,p-Xylenes	112.9	102.8	91	54-122	0	22
o-Xylene	56.46	51.18	91	57-121	2	21

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	97	80-120
Toluene-d8	96	80-120
Bromofluorobenzene	94	80-123

RPD= Relative Percent Difference
Page 1 of 1

8260S / 8260W 1042

Page 2

Data File: \\Gomsserver\DD\chem\MSVDA06.i\071504.b\FGF11.D

Date : 15-JUL-2004 16:30

Client ID: bfb tune std

Instrument: MSVDA06.i

Sample Info: BFB,04WS1238

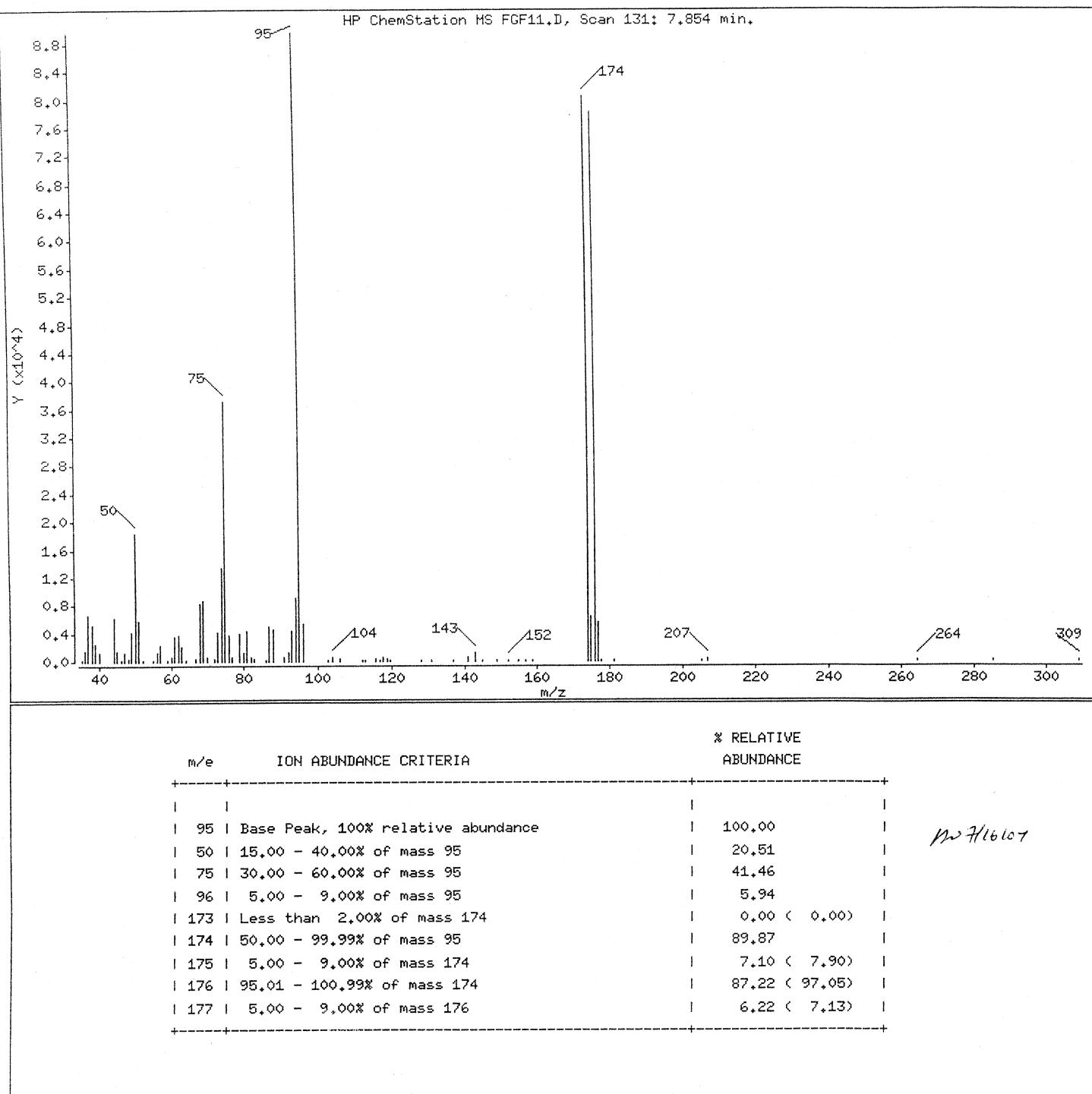
Volume Injected (uL): 1.0

Operator: VOA

Column phase:

Column diameter: 2.00

1 bfb



Data File: \\Gomsserver\\ID\\chem\\MSVDA06.i\\072004.b\\FGK04.D

Date : 20-JUL-2004 10:18

Client ID: bfb tune std

Instrument: MSVDA06.i

Sample Info: BFB,04WS1238

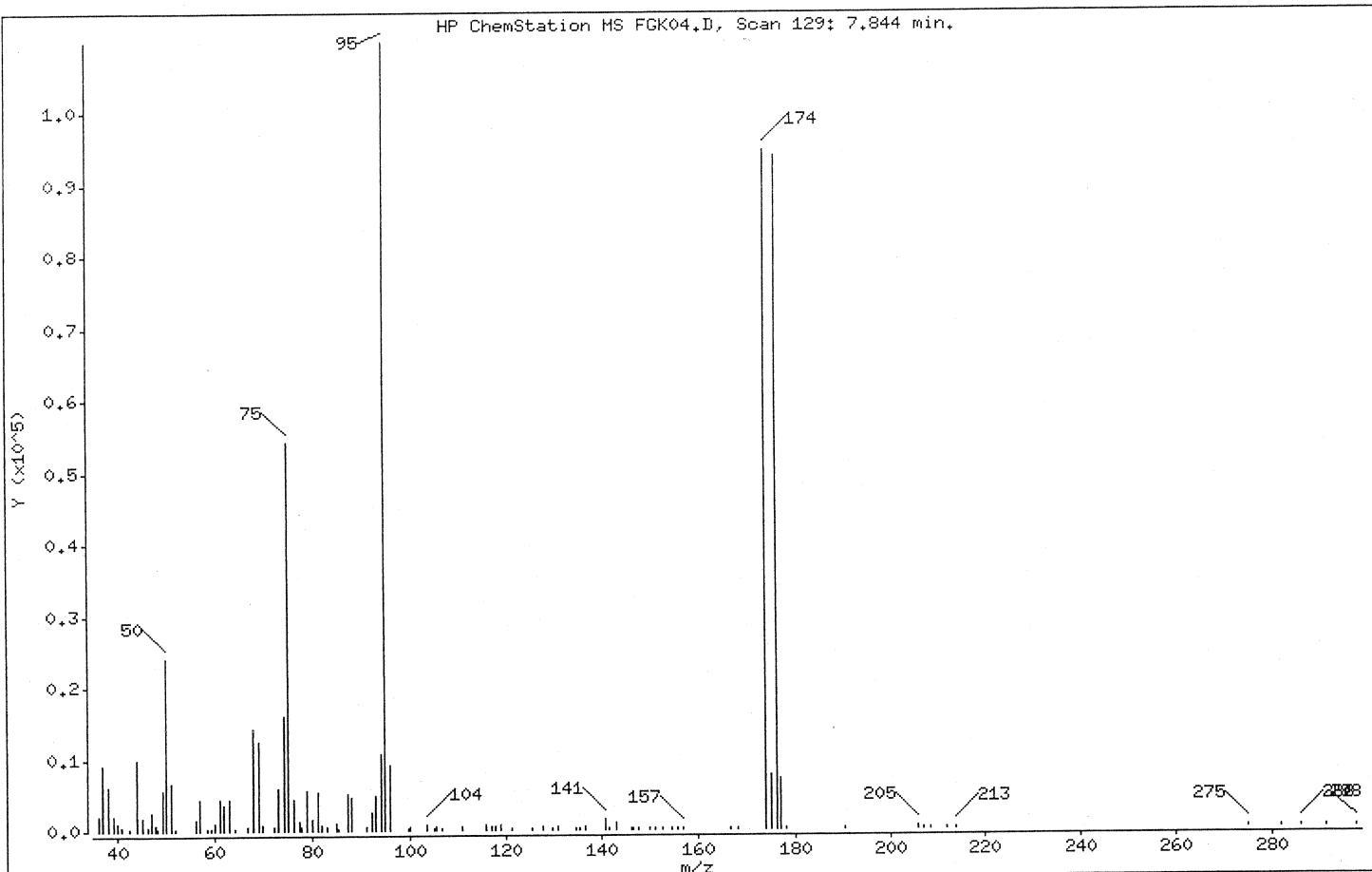
Volume Injected (uL): 1.0

Operator: VOA

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.96
75	30.00 - 60.00% of mass 95	49.36
96	5.00 - 9.00% of mass 95	8.20
173	Less than 2.00% of mass 174	0.00 (< 0.00)
174	50.00 - 99.99% of mass 95	86.07
175	5.00 - 9.00% of mass 174	6.99 (< 8.12)
176	95.01 - 100.99% of mass 174	85.53 (< 99.37)
177	5.00 - 9.00% of mass 176	6.44 (< 7.53)

7/20/04

Ah
07/20/04

Data File: \\GCMSSERVER\\DD\\chem\\MSVDA06.i\\072004.b\\FGK18.D

Date : 20-JUL-2004 18:10

Client ID: bfb tune std

Instrument: MSVDA06.i

Sample Info: BFB,04WS1238

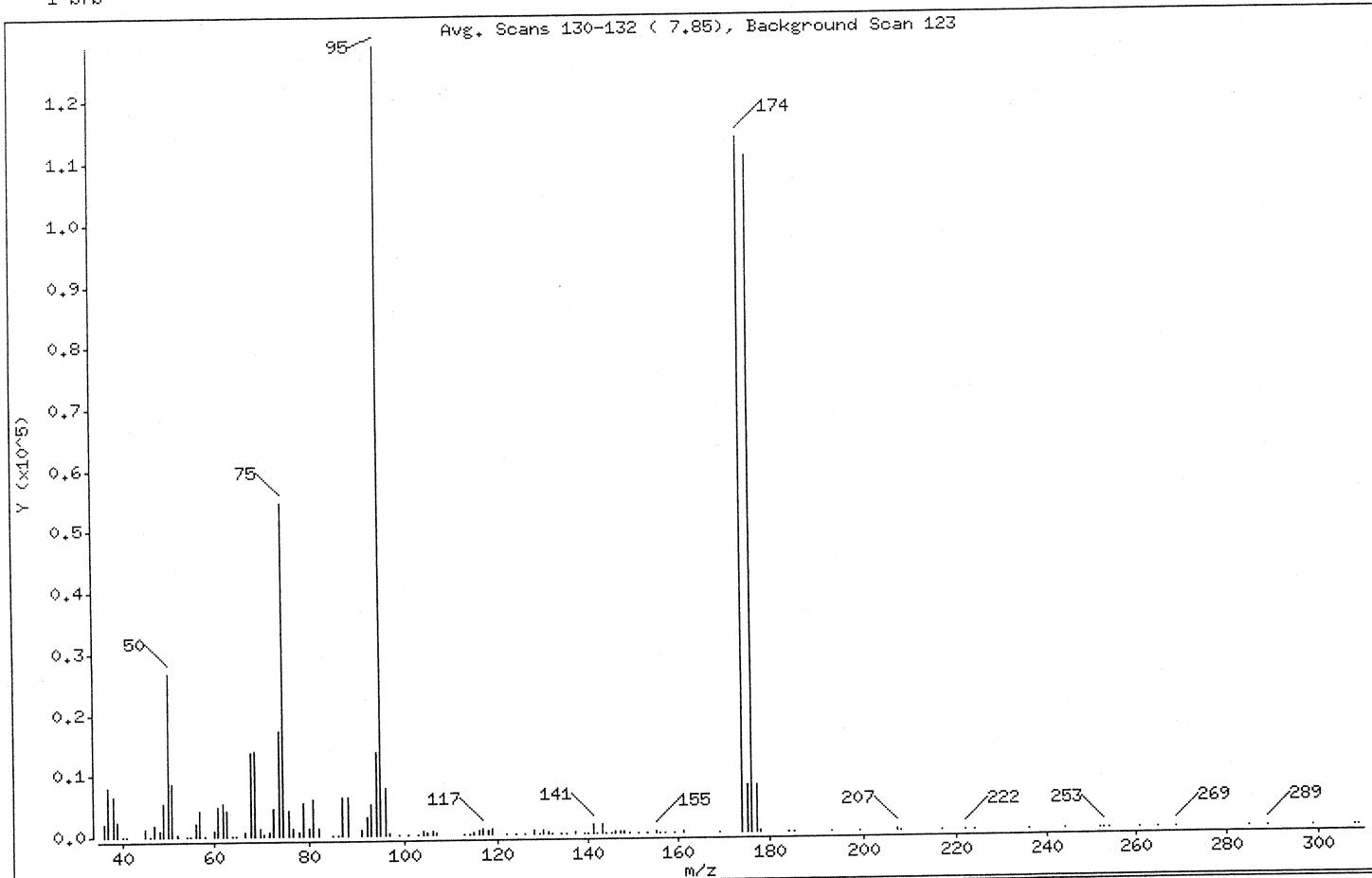
Volume Injected (uL): 1.0

Operator: VOA

Column phase:

Column diameter: 2.00

1 bfb



m/e ION ABUNDANCE CRITERIA

j2571204

	% RELATIVE ABUNDANCE
95 Base Peak, 100% relative abundance	100.00
50 15.00 - 40.00% of mass 95	20.71
75 30.00 - 60.00% of mass 95	42.35
96 5.00 - 9.00% of mass 95	6.03
173 Less than 2.00% of mass 174	0.00 (< 0.00)
174 50.00 - 99.99% of mass 95	88.04
175 5.00 - 9.00% of mass 174	6.07 (< 6.89)
176 95.01 - 100.99% of mass 174	85.72 (< 97.37)
177 5.00 - 9.00% of mass 176	6.02 (< 7.02)

5260514

INITIAL CALIBRATION REPORT
Curtis & Tompkins Laboratories

Instrument: MSVOA06 HP GCMS VOA 06
Calnum: 454284216002 Name: I6M826

Reviewed By: _____
Date: 15-JUL-2004 23:42 Inj Vol (uL): 5000

Calibration levels:

#	Filename	Sequnum	Samplenum	Analyzed	Standards
1	fgf24	454284216024	5PPB	15-JUL-2004 23:42	04SS242 (1000X), 04WS1132B (50000X), 04WS1255 (1000X)
2	fgf25	454284216025	10PPB	16-JUL-2004 00:17	04SS242 (5000X), 04WS1132B (25000X), 04WS1255 (1000X)
3	fgf26	454284216026	20PPB	16-JUL-2004 00:52	04SS242 (25000X), 04WS1132B (12500X), 04WS1255 (1000X)
4	fgf27	454284216027	50PPB	16-JUL-2004 01:27	04SS242 (10000X), 04WS1132B (5000X), 04WS1255 (1000X)
5	fgf28	454284216028	62.5PPB	16-JUL-2004 02:02	04SS242 (80000X), 04WS1132B (40000X), 04WS1255 (1000X)
6	fgf29	454284216029	75PPB	16-JUL-2004 02:37	04SS242 (6667X), 04WS1132B (33333X), 04WS1255 (1000X)
7	fgf30	454284216030	100PPB	16-JUL-2004 03:11	04SS242 (5000X), 04WS1132B (25000X), 04WS1255 (1000X)

Analyte	$\text{f}^{\text{a}2}$						$\text{f}^{\text{a}2}$					
	L1	L2	L3	L4	L5	L6	L7	Type X	a0	a1	a2	units
Freon 12	1.0737	1.0726	1.1622	1.3631	1.0851	1.2536	1.1626	AVRG R	0.855758	ug/L	1.1686	9
Chloromethane	0.8807	0.8411	0.8114	0.8546	0.7490	0.8427	0.8072	AVRG R	1.209695	ug/L	0.8267	5
Vinyl Chloride	0.3619m	0.3329	0.3340	0.3519	0.2915	0.3127	0.2761	AVRG R	3.095962	ug/L	0.3230	10
Bromomethane	0.4982m	0.4582m	0.4463	0.5222	0.5050	0.5606	0.5219	AVRG R	2.010061	ug/L	0.4975	9
Chloroethane	0.4051m	0.4033	0.3644	0.4374	0.3653	0.4250	0.3948	AVRG R	2.504112	ug/L	0.3993	7
Trichlorofluoromethane	0.9010m	0.9386	0.9164	1.1064	0.9068	1.0129	0.9449	AVRG R	1.040581	ug/L	0.9610	8
Acetone	0.5023	0.4328	0.3888	0.3670	0.3535	0.3407	0.3407	AVRG R	2.515613	ug/L	0.3975	15
Freon 113	0.4308m	0.5603	0.6513	0.7056	0.6284	0.6726	0.6587	AVRG R	1.624983	ug/L	0.6154	15
1,1-Dichloroethene	0.4760m	0.5249m	0.5832m	0.6196	0.5433	0.5803	0.5705	AVRG R	1.793716	ug/L	0.5575	8
Methylene Chloride	0.8081	0.7674	0.7708	0.7220	0.7209	0.7076	0.7076	AVRG R	1.334296	ug/L	0.7495	5
Carbon Disulfide	2.4801	2.3878	2.1515	2.1350	1.9489	1.9697	1.8868	AVRG R	0.467920	ug/L	2.1371	11
MTBE	1.6948	1.7704	1.7659	1.7795	1.7050	1.7176	1.6823	AVRG R	0.577778	ug/L	1.7308	2
trans-1,2-Dichloroethene	0.6400m	0.6753	0.6910	0.7014	0.6542	0.6758	0.66666	AVRG R	1.488003	ug/L	0.6720	3
Vinyl Acetate	1.9434	1.9911	1.9492	1.8471	1.7916	1.7456	1.7456	AVRG R	0.532480	ug/L	1.8780	5
1,1-Dichloroethane	1.2682	1.3421	1.3307	1.3621	1.2809	1.2726	1.2447	AVRG R	0.769121	ug/L	1.3002	3
2-Butanone	0.6597	0.6495	0.6206	0.6013	0.5997	0.5777	0.5777	AVRG R	1.611971	ug/L	0.6181	5
2,2-Dichloropropane	0.6794	0.7671	0.8161	0.8814	0.7944	0.8449	0.8317	AVRG R	1.246665	ug/L	0.8021	8
cis-1,2-Dichloroethene	0.7155	0.7632	0.7341	0.7608	0.7188	0.7327	0.7304	AVRG R	1.357808	ug/L	0.7365	3

Flags used: m=manual integration for incomplete integration
 curves: AVRG: Average response factor (a1 + response^2 * a2)
 Instrument amount = a0 + response * a1 + response^2 * a2
 Page 1 of 3

* 1Cap - 0L
 * 1CV - 0L

5260 S CA

INITIAL CALIBRATION REPORT
Curtis & Tompkins Laboratories

Instrument: MSVOA06 HP GCMS VOA 06
Calnum: 454284216002 Name: I6M826

Reviewed By:
Date: 15-JUL-2004 23:42 Inj Vol (uL): 5000

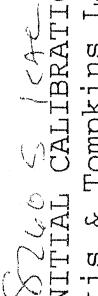
Analyte	L1	L2	L3	L4	L5	L6	L7	Type X	a0	a1	a2	units	avg	f^2	%RSD	MTRF	MRC^2	MxRSD	Flags
Chloroform	1.2044	1.1872	1.2242	1.2381	1.1624	1.1752	1.1456	AVRG R	0.839627	ug/L	1.1910	3	0.0500	0.99	15				
Bromochloromethane	0.4140	0.4087	0.4195	0.4338	0.4134	0.4238	0.4200	AVRG R	2.386530	ug/L	0.4190	2	0.0500	0.99	15				
1,1,1-Trichloroethane	0.7169	0.8411	0.9135	0.9623	0.8845	0.9213	0.9009	AVRG R	1.139978	ug/L	0.8772	9	0.0500	0.99	15				
1,1-Dichloropropane	0.4109	0.4714	0.5058	0.5503	0.4962	0.5342	0.5333	AVRG R	1.998818	ug/L	0.5003	10	0.0500	0.99	15				
Carbon Tetrachloride	0.3309	0.4232	0.4832	0.5232	0.4793	0.5232	0.5235	AVRG R	2.129874	ug/L	0.4695	15	0.0500	0.99	15				
1,2-Dichloroethane	0.5874	0.5676	0.5784	0.6056	0.5662	0.5833	0.5762	AVRG R	1.722145	ug/L	0.5807	2	0.0500	0.99	15				
Benzene	1.3347	1.3943	1.4233	1.4308	1.3219	1.3601	1.3320	AVRG R	0.729394	ug/L	1.3710	3	0.0500	0.99	15				
Trichloroethene	0.3858m	0.3940m	0.4166m	0.4390m	0.4072m	0.4344m	0.4337m	AVRG R	2.404941	ug/L	0.4158	5	0.0500	0.99	15				
1,2-Dichloropropane	0.4183	0.4445	0.4563	0.4718	0.4425	0.4546	0.4636	AVRG R	2.221042	ug/L	0.4502	4	0.0500	0.99	15				
Bromodichloromethane	0.5009	0.4898	0.5020	0.5304	0.5001	0.5148	0.5188	AVRG R	1.968003	ug/L	0.5081	3	0.0500	0.99	15				
Dibromomethane	0.3565	0.3575	0.3664	0.3915	0.3713	0.3830	0.3859	AVRG R	2.679937	ug/L	0.3731	4	0.0500	0.99	15				
4-Methyl-2-Pentanone	0.6866	0.6974	0.7014	0.6592	0.6754	0.6682	0.6682	AVRG R	1.467630	ug/L	0.6814	2	0.0500	0.99	15				
cis-1,3-Dichloropropene	0.5956	0.6229	0.6236	0.6645	0.6169	0.6295	0.6372	AVRG R	1.594518	ug/L	0.6271	3	0.0500	0.99	15				
Toluene	0.8236	0.8592	0.8771	0.8957	0.8215	0.8405	0.8421	AVRG R	1.174558	ug/L	0.8514	3	0.0500	0.99	15				
trans-1,3-Dichloropropene	0.5184	0.5460	0.5520	0.5946	0.5562	0.5694	0.5651	AVRG R	1.794067	ug/L	0.5574	4	0.0500	0.99	15				
1,1,2-Trichloroethane	0.2191m	0.2322m	0.2352	0.2510	0.2387	0.2452	0.2466	AVRG R	4.196727	ug/L	0.2383	5	0.0500	0.99	15				
2-Hexanone	0.6624	0.6888	0.6698	0.6609	0.6693	0.6554	0.6554	AVRG R	1.497544	ug/L	0.6678	2	0.0500	0.99	15				
1,3-Dichloropropane	0.7018	0.7537	0.7501	0.7442	0.7095	0.7350	0.7269	AVRG R	1.372171	ug/L	0.7288	3	0.0500	0.99	15				
Tetrachloroethene	0.3721	0.4166	0.4408	0.4638	0.4326	0.4800	0.4710	AVRG R	2.275089	ug/L	0.4395	8	0.0500	0.99	15				
Dibromochloromethane	0.5257	0.5542	0.5716	0.6062	0.5796	0.6110	0.6123	AVRG R	1.723902	ug/L	0.5801	6	0.0500	0.99	15				
1,2-Dibromoethane	0.4289	0.4385	0.4496	0.4715	0.4436	0.4533	0.4547	AVRG R	2.229218	ug/L	0.4486	3	0.0500	0.99	15				
Chlorobenzene	1.2533	1.2501	1.2517	1.2392	1.1899	1.2404	1.1911	AVRG R	0.812470	ug/L	1.2308	2	0.3000	0.99	15				
1,1,2-Tetrachloroethane	0.3862	0.4146	0.5245	0.4445	0.4294	0.4574	0.4510	AVRG R	2.327466	ug/L	0.4297	6	0.0500	0.99	15				
Ethybenzene	1.7496	1.8670	1.9405	1.9127	1.8064	1.8650	1.7843	AVRG R	0.541564	ug/L	1.8465	4	0.0500	0.99	15				
m,p-Xylenes	0.6791	0.7408	0.7537	0.7609	0.7209	0.7596	0.7530	AVRG R	1.359724	ug/L	0.7354	4	0.0500	0.99	15				
o-Xylene	0.6829	0.7170	0.7432	0.7653	0.7354	0.7618	0.7534	AVRG R	1.356850	ug/L	0.7370	4	0.0500	0.99	15				
Styrene	1.1673	1.2334	1.2882	1.3187	1.2477	1.3020	1.2629	AVRG R	0.793631	ug/L	1.2600	4	0.0500	0.99	15				
Bromoform	0.3500	0.3626	0.3930	0.4278	0.4115	0.4419	0.4417	AVRG R	2.474934	ug/L	0.4041	9	0.1000	0.99	15				
Isopropylbenzene	3.1892	3.4905	3.6783	3.5764	3.3053	3.4583	3.3263	AVRG R	0.291372	ug/L	3.4320	5	0.0500	0.99	15				
1,1,2,2-Tetrachloroethane	1.3992	1.4922	1.5127	1.4423	1.3807	1.4369	1.4146	AVRG R	0.694547	ug/L	1.4398	3	0.3000	0.99	15				
1,2,3-Trichloropropane	0.3509	0.3736	0.3548	0.3551	0.3477	0.3564	0.3493	AVRG R	2.813768	ug/L	0.3554	2	0.0500	0.99	15				

Flags used: m=manual integration

Curves: AVRG: Average response factor

Instrument amount = a0 + response * a1 + response^2 * a2

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INITIAL CALIBRATION REPORT
 Curtis & Tompkins Laboratories

Instrument: MSVOA06 HP GCMS VOA 06
 Calnum: 454284216002 Name: I6M826

Reviewed By:
 Date: 15-JUL-2004 23:42 Inj Vol (uL) : 5000

Analyte	L1	L2	L3	L4	L5	L6	L7	Type X	a0	a1	a2	units	avg	%RSD	MnRF	MnR^2	MxRSD	Flags
Propylbenzene	4.1419	4.4670	4.6170	4.4260	4.1095	4.2583	3.9836	AVRG R	0.233308			ug/L	4.2862	5	0.0500	0.99	15	
Bromobenzene	1.0713	1.0329	1.0727	1.0945	1.0468	1.1134	1.0959	AVRG R	0.929913			ug/L	1.0754	3	0.0500	0.99	15	
1,3,5-Trimethylbenzene	2.7473	2.9449	3.0347	2.9773	2.8162	2.9464	2.8263	AVRG R	0.344946			ug/L	2.8990	4	0.0500	0.99	15	
2-Chlorotoluene	3.0055	3.0507	3.1128	2.9545	2.8000	2.8977	2.8092	AVRG R	0.339304			ug/L	2.9472	4	0.0500	0.99	15	
4-Chlorotoluene	2.7113	2.8898	2.8159	2.7390	2.5997	2.7022	2.5417	AVRG R	0.368428			ug/L	2.7142	4	0.0500	0.99	15	
tert-Butylbenzene	2.1462 ^m	2.3747	2.5766	2.5673 ^m	2.4057	2.5399	2.4861	AVRG R	0.409440			ug/L	2.4424	6	0.0500	0.99	15	
1,2,4-Trimethylbenzene	2.8163	2.9539	3.0174	2.9726	2.8257	2.9265	2.7801	AVRG R	0.344955			ug/L	2.8989	3	0.0500	0.99	15	
sec-Butylbenzene	3.3429	3.8365	4.0691	3.9479	3.6873	3.9006	3.6516	AVRG R	0.264791			ug/L	3.7766	6	0.0500	0.99	15	
Para-isopropyl Toluene	2.6210	2.9215	3.0915	3.0673	2.8824	3.0366	2.8655	AVRG R	0.341699			ug/L	2.9265	6	0.0500	0.99	15	
1,3-Dichlorobenzene	1.7407	1.7699	1.7463	1.7473	1.6689	1.7247	1.6851	AVRG R	0.579330			ug/L	1.7261	2	0.0500	0.99	15	
1,4-Dichlorobenzene	1.7991	1.8694	1.8235	1.7825	1.6881	1.7666	1.7242	AVRG R	0.562093			ug/L	1.7771	3	0.0500	0.99	15	
n-Butylbenzene	2.7518	2.9491	3.0526	2.9539	2.7369	2.8695	2.6818	AVRG R	0.350079			ug/L	2.8565	5	0.0500	0.99	15	
1,2-Dichlorobenzene	1.6342	1.6772	1.6991	1.6645	1.6108	1.6653	1.6137	AVRG R	0.605280			ug/L	1.6521	2	0.0500	0.99	15	
1,2-Dibromo-3-Chloropropane	0.2378	0.2591	0.2643	0.2569	0.2516	0.2595	0.2547	AVRG R	3.924089			ug/L	0.2548	3	0.0500	0.99	15	
1,2,4-Trichlorobenzene	0.9295	0.9356	0.9119	0.9215	0.8979	0.9476	0.9077	AVRG R	1.084966			ug/L	0.9217	2	0.0500	0.99	15	
Hexachlorobutadiene	0.4693	0.5047	0.5061	0.5313	0.5052	0.5561	0.5528	AVRG R	1.930730			ug/L	0.5179	6	0.0500	0.99	15	
Naphthalene	1.8444	2.0165	2.1501	2.2121	2.1438	2.2348	2.1354	AVRG R	0.474993			ug/L	2.1053	6	0.0500	0.99	15	
1,2,3-Trichlorobenzene	0.8722	0.8967	0.8996	0.9473	0.9063	0.9748	0.9495	AVRG R	1.085867			ug/L	0.9209	4	0.0500	0.99	15	
Dibromofluoromethane	0.7853	0.7830	0.7769	0.7718	0.7652	0.7432	0.7552	AVRG R	1.300967			ug/L	0.7687	2	0.0500	0.99	15	
1,2-Dichloroethane-d4	0.4027	0.4115	0.4153	0.4146	0.4064	0.4110	0.4218	AVRG R	2.427697			ug/L	0.4119	2	0.0500	0.99	15	
Toluene-d8	1.0139	1.0177	0.9981	1.0194	0.9912	0.9855	1.0002	AVRG R	0.996292			ug/L	1.0037	1	0.0500	0.99	15	
BromoFluorobenzene	1.1015	1.1171	1.1022	1.0920	1.0566	1.0702	1.0765	AVRG R	0.919121			ug/L	1.0880	2	0.0500	0.99	15	

Flags used: m=manual integration

Curves: AVRG: Average response factor

Instrument amount = a0 + response * a1 + response^2 * a2

8260 S ICAL

SECOND SOURCE CALIBRATION VERIFICATION
Curtis & Tompkins Laboratories

Instid : MSVOA06 Run Name : 50PPB
Seqnum : 454284216031 Filename : fgf31 Injected : 16-JUL-2004 03:46
Calnum : 454284216002 Caldate : 15-JUL-2004 Caltype : SOIL
Standards: 04WS1304A (5000X), 04WS1255 (1000X)

Analyte	SpkAmt	QuantAmt	Units	%D	Max	Flags
Freon 12	50.00000	42.88800	ug/L	-14	30	
Chloromethane	50.00000	51.40060	ug/L	3	30	
Vinyl Chloride	50.00000	52.57370	ug/L	5	20	
Bromomethane	50.00000	53.19530	ug/L	6	30	
Chloroethane	50.00000	52.77740	ug/L	6	30	
Trichlorofluoromethane	50.00000	56.91360	ug/L	14	30	
Dibromofluoromethane	50.00000	49.49890	ug/L	-1	30	
1,2-Dichloroethane-d4	50.00000	49.18370	ug/L	-2	30	
Toluene-d8	50.00000	48.87250	ug/L	-2	30	
Bromofluorobenzene	50.00000	51.54410	ug/L	3	30	

ISTD (ICAL=fgf27)	ICAL Area	Area	%Diff	ICAL RT	RT	Diff
Pentafluorobenzene	1280892	1289103	0.64	9.02	9.02	0.00
1,4-Difluorobenzene	2124066	2173973	2.35	10.51	10.51	0.00
Chlorobenzene-d5	1735753	1711419	-1.40	15.53	15.52	-0.01
1,4-Dichlorobenzene-d4	863989	784241	-9.23	19.83	19.83	0.00

7/16/04

Alb
07/16/04

J. M. J. W. C.

82605 104L
SECOND SOURCE CALIBRATION VERIFICATION
Curtis & Tompkins Laboratories

Instid : MSVOA06 Run Name : 50PPB
 Seqnum : 454284216032 Filename : fgf32 Injected : 16-JUL-2004 04:21
 Caltyp : SOIL

Standards: 04WS1032D (5000X), 04WS1255 (1000X)

Analyte	Calnum	Caldate	SpkAmt	QuantAmt	Units	%D	Max	Flags
Acetone	454284216002	15-JUL-2004	50.00000	44.07880	ug/L	-12	40	
Freon 113	454284216002	15-JUL-2004	50.00000	58.00470	ug/L	16	30	
1,1-Dichloroethene	454284216002	15-JUL-2004	50.00000	50.26440	ug/L	1	20	
Methylene Chloride	454284216002	15-JUL-2004	50.00000	49.74400	ug/L	-1	30	
Carbon Disulfide	454284216002	15-JUL-2004	50.00000	46.53060	ug/L	-7	30	
MTBE	454284216002	15-JUL-2004	50.00000	55.12340	ug/L	10	30	
trans-1,2-Dichloroethene	454284216002	15-JUL-2004	50.00000	50.69130	ug/L	1	30	
Vinyl Acetate	454284216002	15-JUL-2004	50.00000	51.46700	ug/L	3	40	
1,1-Dichloroethane	454284216002	15-JUL-2004	50.00000	50.87750	ug/L	2	30	
2-Butanone	454284216002	15-JUL-2004	50.00000	47.53560	ug/L	-5	40	
2,2-Dichloropropane	454284216002	15-JUL-2004	50.00000	54.04750	ug/L	8	30	
cis-1,2-Dichloroethene	454284216002	15-JUL-2004	50.00000	51.17650	ug/L	2	30	
Chloroform	454284216002	15-JUL-2004	50.00000	50.61250	ug/L	1	20	
Bromochloromethane	454284216002	15-JUL-2004	50.00000	51.22050	ug/L	2	30	
1,1,1-Trichloroethane	454284216002	15-JUL-2004	50.00000	54.16150	ug/L	8	30	
1,1-Dichloropropene	454284216002	15-JUL-2004	50.00000	54.04810	ug/L	8	30	
Carbon Tetrachloride	454284216002	15-JUL-2004	50.00000	57.60700	ug/L	15	30	
1,2-Dichloroethane	454284216002	15-JUL-2004	50.00000	52.44180	ug/L	5	30	
Benzene	454284216002	15-JUL-2004	50.00000	53.54930	ug/L	7	30	
Trichloroethene	454284216002	15-JUL-2004	50.00000	50.60650	ug/L	1	30	
1,2-Dichloropropane	454284216002	15-JUL-2004	50.00000	51.36140	ug/L	3	20	
Bromodichloromethane	454284216002	15-JUL-2004	50.00000	57.29990	ug/L	15	30	
Dibromomethane	454284216002	15-JUL-2004	50.00000	52.84400	ug/L	6	30	
2-Chloroethylvinylether	453472922001	24-NOV-2003	50.00000	54.03690	ug/L	8	40 !	(NOT USED) NT / NJS
4-Methyl-2-Pentanone	454284216002	15-JUL-2004	50.00000	49.17190	ug/L	-2	40	
cis-1,3-Dichloropropene	454284216002	15-JUL-2004	50.00000	52.91370	ug/L	6	30	
Toluene	454284216002	15-JUL-2004	50.00000	53.43480	ug/L	7	20	
trans-1,3-Dichloropropene	454284216002	15-JUL-2004	50.00000	50.50110	ug/L	1	30	
1,1,2-Trichloroethane	454284216002	15-JUL-2004	50.00000	52.94790	ug/L	6	30	
2-Hexanone	454284216002	15-JUL-2004	50.00000	48.75190	ug/L	-2	40	
1,3-Dichloropropane	454284216002	15-JUL-2004	50.00000	52.21420	ug/L	4	30	
Tetrachloroethene	454284216002	15-JUL-2004	50.00000	54.33470	ug/L	9	30	
Dibromochloromethane	454284216002	15-JUL-2004	50.00000	51.55190	ug/L	3	30	
1,2-Dibromoethane	454284216002	15-JUL-2004	50.00000	53.48800	ug/L	7	30	
Chlorobenzene	454284216002	15-JUL-2004	50.00000	50.49870	ug/L	1	30	
1,1,1,2-Tetrachloroethane	454284216002	15-JUL-2004	50.00000	52.25390	ug/L	5	30	
Ethylbenzene	454284216002	15-JUL-2004	50.00000	52.97010	ug/L	6	20	
m,p-Xylenes	454284216002	15-JUL-2004	100.0000	104.6006	ug/L	5	30	
o-Xylene	454284216002	15-JUL-2004	50.00000	52.86860	ug/L	6	30	
Styrene	454284216002	15-JUL-2004	50.00000	53.70610	ug/L	7	30	
Bromoform	454284216002	15-JUL-2004	50.00000	53.67550	ug/L	7	30	
Isopropylbenzene	454284216002	15-JUL-2004	50.00000	47.02620	ug/L	-6	30	
1,1,2,2-Tetrachloroethane	454284216002	15-JUL-2004	50.00000	49.53570	ug/L	-1	30	
1,2,3-Trichloropropene	454284216002	15-JUL-2004	50.00000	49.62080	ug/L	-1	30	
Propylbenzene	454284216002	15-JUL-2004	50.00000	50.84610	ug/L	2	30	
Bromobenzene	454284216002	15-JUL-2004	50.00000	51.34630	ug/L	3	30	
1,3,5-Trimethylbenzene	454284216002	15-JUL-2004	50.00000	52.33650	ug/L	5	30	

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 SECOND SOURCE CALIBRATION VERIFICATION
 Curtis & Tompkins Laboratories

Instid : MSVOA06 Run Name : 50PPB
 Seqnum : 454284216032 Filename : fgf32 Injected : 16-JUL-2004 04:21
 Caltype : SOIL
 Standards: 04WS1032D (5000X), 04WS1255 (1000X)

Analyte	Calnum	Caldate	SpkAmt	QuantAmt	Units	%D	Max	Flags
2-Chlorotoluene	454284216002	15-JUL-2004	50.00000	50.47540	ug/L	1	30	
4-Chlorotoluene	454284216002	15-JUL-2004	50.00000	51.23060	ug/L	2	30	
tert-Butylbenzene	454284216002	15-JUL-2004	50.00000	53.95090	ug/L	8	30	
1,2,4-Trimethylbenzene	454284216002	15-JUL-2004	50.00000	52.42190	ug/L	5	30	
sec-Butylbenzene	454284216002	15-JUL-2004	50.00000	53.12120	ug/L	6	30	
para-Isopropyl Toluene	454284216002	15-JUL-2004	50.00000	51.72850	ug/L	3	30	
1,3-Dichlorobenzene	454284216002	15-JUL-2004	50.00000	51.20300	ug/L	2	30	
1,4-Dichlorobenzene	454284216002	15-JUL-2004	50.00000	51.25420	ug/L	3	30	
n-Butylbenzene	454284216002	15-JUL-2004	50.00000	54.13300	ug/L	8	30	
1,2-Dichlorobenzene	454284216002	15-JUL-2004	50.00000	51.07620	ug/L	2	30	
1,2-Dibromo-3-Chloropropane	454284216002	15-JUL-2004	50.00000	51.67830	ug/L	3	30	
1,2,4-Trichlorobenzene	454284216002	15-JUL-2004	50.00000	54.32950	ug/L	9	30	
Hexachlorobutadiene	454284216002	15-JUL-2004	50.00000	54.79390	ug/L	10	30	
Naphthalene	454284216002	15-JUL-2004	50.00000	56.70500	ug/L	13	30	
1,2,3-Trichlorobenzene	454284216002	15-JUL-2004	50.00000	55.73370	ug/L	11	30	
Dibromofluoromethane	454284216002	15-JUL-2004	50.00000	48.83090	ug/L	-2	30	(NOT USED)
1,2-Dichloroethane-d4	454284216002	15-JUL-2004	50.00000	49.96750	ug/L	0	30	(NOT USED)
Toluene-d8	454284216002	15-JUL-2004	50.00000	50.67480	ug/L	1	30	(NOT USED)
Bromofluorobenzene	454284216002	15-JUL-2004	50.00000	48.14140	ug/L	-4	30	(NOT USED)

ISTD (ICAL=fgf27)	ICAL Area	Area	%Diff	ICAL RT	RT	DIFF
Pentafluorobenzene	1280892	1352725	5.61	9.02	9.02	0.00
1,4-Difluorobenzene	2124066	2194753	3.33	10.51	10.51	0.00
Chlorobenzene-d5	1735753	1773604	2.18	15.53	15.53	0.00
1,4-Dichlorobenzene-d4	863989	901108	4.30	19.83	19.83	0.00

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Curtis & Tompkins Laboratories

Instid : MSVOA06 Run Name : 50PPB IDF : 1.0
 Seqnum : 454291395005 Filename : fgk05 Injected : 20-JUL-2004 10:34
 Calnum : 454284216002 Caldate : 15-JUL-2004 Caltype : SOIL
 Standards: 04SS250 (10000X), 04WS1132C (5000X), 04WS1255 (1000X)

Analyte	Avg	RF/CF	RF/CF	SpkAmt	QuantAmt	Units	%D	Max	%D	Min	RF	Flags
Freon 12	1.1686	1.3841	50.00000	59.22110	ug/L	18	30	0.0500				
Chloromethane	0.8267	0.7904	50.00000	47.80690	ug/L	-4	30	0.1000				
Vinyl Chloride	0.3230	0.3345	50.00000	51.77490	ug/L	4	20	0.0500				
Bromomethane	0.4975	0.4392	50.00000	44.14420	ug/L	-12	30	0.0500				
Chloroethane	0.3993	0.3508	50.00000	43.92290	ug/L	-12	30	0.0500				
Trichlorofluoromethane	0.9610	0.9084	50.00000	47.26580	ug/L	-5	30	0.0500				
Acetone	0.3975	0.3053	50.00000	38.40560	ug/L	-23	40	0.0500				
Freon 113	0.6154	0.6249	50.00000	50.77460	ug/L	2	30	0.0500				
1,1-Dichloroethene	0.5575	0.5317	50.00000	47.68260	ug/L	-5	20	0.0500				
Methylene Chloride	0.7495	0.6233	50.00000	41.58350	ug/L	-17	30	0.0500				
Carbon Disulfide	2.1371	1.7402	50.00000	40.71310	ug/L	-19	30	0.0500				
MTBE	1.7308	1.3181	50.00000	38.07970	ug/L	-24	30	0.0500	!c-			
trans-1,2-Dichloroethene	0.6720	0.6035	50.00000	44.89740	ug/L	-10	30	0.0500				
Vinyl Acetate	1.8780	1.3067	50.00000	34.78930	ug/L	-30	40	0.0500				
1,1-Dichloroethane	1.3002	1.0808	50.00000	41.56440	ug/L	-17	30	0.1000				
2-Butanone	0.6181	0.4203	50.00000	34.00170	ug/L	-32	40	0.0500	!c-			
2,2-Dichloropropane	0.8021	0.8038	50.00000	50.10090	ug/L	0	30	0.0500				
cis-1,2-Dichloroethene	0.7365	0.6413	50.00000	43.53950	ug/L	-13	30	0.0500				
Chloroform	1.1910	1.0210	50.00000	42.86220	ug/L	-14	20	0.0500				
Bromochloromethane	0.4190	0.3702	50.00000	44.18020	ug/L	-12	30	0.0500				
1,1,1-Trichloroethane	0.8772	0.8166	50.00000	46.54410	ug/L	-7	30	0.0500				
1,1-Dichloropropene	0.5003	0.5221	50.00000	52.18400	ug/L	4	30	0.0500				
Carbon Tetrachloride	0.4695	0.5172	50.00000	55.08050	ug/L	10	30	0.0500				
1,2-Dichloroethane	0.5807	0.4972	50.00000	42.81400	ug/L	-14	30	0.0500				
Benzene	1.3710	1.2914	50.00000	47.09530	ug/L	-6	30	0.0500				
Trichloroethene	0.4158	0.4048	50.00000	48.67530	ug/L	-3	30	0.0500				
1,2-Dichloropropane	0.4502	0.4056	50.00000	45.03750	ug/L	-10	20	0.0500				
Bromodichloromethane	0.5081	0.4571	50.00000	44.97890	ug/L	-10	30	0.0500				
Dibromomethane	0.3731	0.3327	50.00000	44.57920	ug/L	-11	30	0.0500				
4-Methyl-2-Pentanone	0.6814	0.4997	50.00000	36.66860	ug/L	-27	40	0.0500				
cis-1,3-Dichloropropene	0.6271	0.5731	50.00000	45.69340	ug/L	-9	30	0.0500				
Toluene	0.8514	0.8076	50.00000	47.43070	ug/L	-5	20	0.0500				
trans-1,3-Dichloropropene	0.5574	0.4962	50.00000	44.51290	ug/L	-11	30	0.0500				
1,1,2-Trichloroethane	0.2383	0.2043	50.00000	42.87200	ug/L	-14	30	0.0500				
2-Hexanone	0.6678	0.4939	50.00000	36.98010	ug/L	-26	40	0.0500				
1,3-Dichloropropane	0.7288	0.6290	50.00000	43.15710	ug/L	-14	30	0.0500				
Tetrachloroethene	0.4395	0.5108	50.00000	58.10580	ug/L	16	30	0.0500				
Dibromochloromethane	0.5801	0.5382	50.00000	46.38610	ug/L	-7	30	0.0500				
1,2-Dibromoethane	0.4486	0.3917	50.00000	43.65410	ug/L	-13	30	0.0500				
Chlorobenzene	1.2308	1.1990	50.00000	48.70570	ug/L	-3	30	0.3000				
1,1,1,2-Tetrachloroethane	0.4297	0.4348	50.00000	50.59590	ug/L	1	30	0.0500				
Ethylbenzene	1.8465	1.8104	50.00000	49.02220	ug/L	-2	20	0.0500				
m,p-Xylenes	0.7354	0.7459	100.0000	101.4229	ug/L	1	30	0.0500				
o-Xylene	0.7370	0.7245	50.00000	49.14940	ug/L	-2	30	0.0500				
Styrene	1.2600	1.1902	50.00000	47.22970	ug/L	-6	30	0.0500				
Bromoform	0.4041	0.3760	50.00000	46.52270	ug/L	-7	30	0.1000				

!=warning +=high bias --low bias c=CCV
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CONTINUING CALIBRATION REPORT
Curtis & Tompkins Laboratories

Instid : MSVOA06 Run Name : 50PPB IDF : 1.0
 Seqnum : 454291395005 Filename : fgk05 Injected : 20-JUL-2004 10:34
 Calnum : 454284216002 Caldate : 15-JUL-2004 Caltype : SOIL
 Standards: 04SS250 (10000X), 04WS1132C (5000X), 04WS1255 (1000X)

Analyte	Avg						%D	Max	%D	Min	RF	Flags
	RF/CF	RF/CF	SpkAmt	QuantAmt	Units							
Isopropylbenzene	3.4320	3.3743	50.00000	49.15930	ug/L	-2	30	0.0500				
1,1,2,2-Tetrachloroethane	1.4398	1.1521	50.00000	40.00800	ug/L	-20	30	0.3000				
1,2,3-Trichloropropane	0.3554	0.2864	50.00000	40.28920	ug/L	-19	30	0.0500				
Propylbenzene	4.2862	4.1349	50.00000	48.23480	ug/L	-4	30	0.0500				
Bromobenzene	1.0754	1.0584	50.00000	49.21040	ug/L	-2	30	0.0500				
1,3,5-Trimethylbenzene	2.8990	2.8747	50.00000	49.58090	ug/L	-1	30	0.0500				
2-Chlorotoluene	2.9472	2.7479	50.00000	46.61940	ug/L	-7	30	0.0500				
4-Chlorotoluene	2.7142	2.6563	50.00000	48.93220	ug/L	-2	30	0.0500				
tert-Butylbenzene	2.4424	2.4861	50.00000	50.89620	ug/L	2	30	0.0500				
1,2,4-Trimethylbenzene	2.8989	2.8473	50.00000	49.10880	ug/L	-2	30	0.0500				
sec-Butylbenzene	3.7766	3.8132	50.00000	50.48550	ug/L	1	30	0.0500				
para-Isopropyl Toluene	2.9265	3.0638	50.00000	52.34530	ug/L	5	30	0.0500				
1,3-Dichlorobenzene	1.7261	1.7847	50.00000	51.69550	ug/L	3	30	0.0500				
1,4-Dichlorobenzene	1.7791	1.8219	50.00000	51.20340	ug/L	2	30	0.0500				
n-Butylbenzene	2.8565	2.9623	50.00000	51.85150	ug/L	4	30	0.0500				
1,2-Dichlorobenzene	1.6521	1.6195	50.00000	49.01360	ug/L	-2	30	0.0500				
1,2-Dibromo-3-Chloropropane	0.2548	0.2014	50.00000	39.51020	ug/L	-21	30	0.0500	!c-			
1,2,4-Trichlorobenzene	0.9217	1.0410	50.00000	56.47350	ug/L	13	30	0.0500				
Hexachlorobutadiene	0.5179	0.6278	50.00000	60.60120	ug/L	-21	30	0.0500	!c+			
Naphthalene	2.1053	1.8878	50.00000	44.83400	ug/L	-10	30	0.0500				
1,2,3-Trichlorobenzene	0.9209	0.9783	50.00000	53.11680	ug/L	6	30	0.0500				
Dibromofluoromethane	0.7687	0.6864	50.00000	44.65240	ug/L	-11	30	0.0500				
1,2-Dichloroethane-d4	0.4119	0.3783	50.00000	45.92210	ug/L	-8	30	0.0500				
Toluene-d8	1.0037	0.9666	50.00000	48.14900	ug/L	-4	30	0.0500				
Bromofluorobenzene	1.0880	1.0110	50.00000	46.46070	ug/L	-7	30	0.0500				

ISTD (ICAL=fgf27)	ICAL	Area	Area	%Diff	ICAL	RT	RT	Diff
Pentafluorobenzene	1280892	2136534	66.80		9.02	9.02	0.00	
1,4-Difluorobenzene	2124066	3224672	51.82		10.51	10.51	0.00	
Chlorobenzene-d5	1735753	2540076	46.34		15.53	15.52	-0.01	
1,4-Dichlorobenzene-d4	863989	1289912	49.30		19.83	19.81	-0.02	

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Curtis & Tompkins Laboratories

Instid : MSVOA06 Run Name : 50PPB IDF : 1.0
 Segnum : 454291395019 Filename : fgk19 Injected : 20-JUL-2004 18:27
 Calnum : 454284216002 Caldate : 15-JUL-2004 Caltype : SOIL
 Standards: 04WS1255 (1000X), 04SS250 (10000X), 04WS1132C (5000X)

Analyte	Avg							%D	Max	%D	Min	RF	Flags
	RF/CF	RF/CF	SpkAmt	QuantAmt	Units								
Freon 12	1.1686	1.2702	50.00000	54.35130	ug/L	9	30	0.0500					
Chloromethane	0.8267	0.6791	50.00000	41.07550	ug/L	-18	30	0.1000					
Vinyl Chloride	0.3230	0.2793	50.00000	43.23710	ug/L	-14	20	0.0500					
Bromomethane	0.4975	0.3798	50.00000	38.16620	ug/L	-24	30	0.0500	!c-				
Chloroethane	0.3993	0.2975	50.00000	37.25320	ug/L	-25	30	0.0500	!c-				
Trichlorofluoromethane	0.9610	0.7897	50.00000	41.08510	ug/L	-18	30	0.0500					
Acetone	0.3975	0.4024	50.00000	50.61820	ug/L	1	40	0.0500					
Freon 113	0.6154	0.6331	50.00000	51.43750	ug/L	3	30	0.0500					
1,1-Dichloroethene	0.5575	0.5472	50.00000	49.07200	ug/L	-2	20	0.0500					
Methylene Chloride	0.7495	0.6282	50.00000	41.90880	ug/L	-16	30	0.0500					
Carbon Disulfide	2.1371	1.8514	50.00000	43.31490	ug/L	-13	30	0.0500					
MTBE	1.7308	1.4528	50.00000	41.96860	ug/L	-16	30	0.0500					
trans-1,2-Dichloroethene	0.6720	0.6189	50.00000	46.04610	ug/L	-8	30	0.0500					
Vinyl Acetate	1.8780	1.4716	50.00000	39.18090	ug/L	-22	40	0.0500					
1,1-Dichloroethane	1.3002	1.0951	50.00000	42.11400	ug/L	-16	30	0.1000					
2-Butanone	0.6181	0.5047	50.00000	40.83210	ug/L	-18	40	0.0500					
2,2-Dichloropropane	0.8021	0.7968	50.00000	49.66630	ug/L	-1	30	0.0500					
cis-1,2-Dichloroethene	0.7365	0.6479	50.00000	43.98640	ug/L	-12	30	0.0500					
Chloroform	1.1910	1.0379	50.00000	43.57340	ug/L	-13	20	0.0500					
Bromochloromethane	0.4190	0.3852	50.00000	45.96470	ug/L	-8	30	0.0500					
1,1,1-Trichloroethane	0.8772	0.8242	50.00000	46.97620	ug/L	-6	30	0.0500					
1,1-Dichloropropene	0.5003	0.5161	50.00000	51.57900	ug/L	3	30	0.0500					
Carbon Tetrachloride	0.4695	0.5183	50.00000	55.19190	ug/L	10	30	0.0500					
1,2-Dichloroethane	0.5807	0.5155	50.00000	44.38770	ug/L	-11	30	0.0500					
Benzene	1.3710	1.3084	50.00000	47.71820	ug/L	-5	30	0.0500					
Trichloroethene	0.4158	0.3955	50.00000	47.55230	ug/L	-5	30	0.0500					
1,2-Dichloropropane	0.4502	0.4134	50.00000	45.90420	ug/L	-8	20	0.0500					
Bromodichloromethane	0.5081	0.4690	50.00000	46.15270	ug/L	-8	30	0.0500					
Dibromomethane	0.3731	0.3409	50.00000	45.68460	ug/L	-9	30	0.0500					
4-Methyl-2-Pentanone	0.6814	0.5559	50.00000	40.79050	ug/L	-18	40	0.0500					
cis-1,3-Dichloropropene	0.6271	0.5931	50.00000	47.28530	ug/L	-5	30	0.0500					
Toluene	0.8514	0.8174	50.00000	48.00270	ug/L	-4	20	0.0500					
trans-1,3-Dichloropropene	0.5574	0.5321	50.00000	47.73380	ug/L	-5	30	0.0500					
1,1,2-Trichloroethane	0.2383	0.2120	50.00000	44.49470	ug/L	-11	30	0.0500					
2-Hexanone	0.6678	0.5570	50.00000	41.70600	ug/L	-17	40	0.0500					
1,3-Dichloropropane	0.7288	0.6627	50.00000	45.46710	ug/L	-9	30	0.0500					
Tetrachloroethene	0.4395	0.5004	50.00000	56.92460	ug/L	14	30	0.0500					
Dibromochloromethane	0.5801	0.5636	50.00000	48.58000	ug/L	-3	30	0.0500					
1,2-Dibromoethane	0.4486	0.4172	50.00000	46.50010	ug/L	-7	30	0.0500					
Chlorobenzene	1.2308	1.2031	50.00000	48.87400	ug/L	-2	30	0.3000					
1,1,1,2-Tetrachloroethane	0.4297	0.4301	50.00000	50.04720	ug/L	0	30	0.0500					
Ethylbenzene	1.8465	1.7709	50.00000	47.95330	ug/L	-4	20	0.0500					
m,p-Xylenes	0.7354	0.7314	100.0000	99.44900	ug/L	-1	30	0.0500					
o-Xylene	0.7370	0.7130	50.00000	48.36910	ug/L	-3	30	0.0500					
Styrene	1.2600	1.2112	50.00000	48.06230	ug/L	-4	30	0.0500					
Bromoform	0.4041	0.4023	50.00000	49.78820	ug/L	0	30	0.1000					

!=warning -=low bias C=CCV
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12/20/04

53
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2004

CONTINUING CALIBRATION REPORT
Curtis & Tompkins Laboratories

Instid : MSVOA06 Run Name : 50PPB IDF : 1.0
 Seqnum : 454291395019 Filename : fgk19 Injected : 20-JUL-2004 18:27
 Calnum : 454284216002 Cald date : 15-JUL-2004 Caltype : SOIL
 Standards: 04WS1255 (1000X), 04SS250 (10000X), 04WS1132C (5000X)

Analyte	Avg						%D	Max	%D	Min	RF	Flags
	RF/CF	RF/CF	SpkAmt	QuantAmt	Units							
Isopropylbenzene	3.4320	3.3654	50.00000	49.02890	ug/L	-2	30	0.0500				
1,1,2,2-Tetrachloroethane	1.4398	1.2344	50.00000	42.86620	ug/L	-14	30	0.3000				
1,2,3-Trichloropropane	0.3554	0.3146	50.00000	44.26110	ug/L	-11	30	0.0500				
Propylbenzene	4.2862	4.1106	50.00000	47.95150	ug/L	-4	30	0.0500				
Bromobenzene	1.0754	1.0663	50.00000	49.57720	ug/L	-1	30	0.0500				
1,3,5-Trimethylbenzene	2.8990	2.8324	50.00000	48.85180	ug/L	-2	30	0.0500				
2-Chlorotoluene	2.9472	2.7334	50.00000	46.37240	ug/L	-7	30	0.0500				
4-Chlorotoluene	2.7142	2.5789	50.00000	47.50710	ug/L	-5	30	0.0500				
tert-Butylbenzene	2.4424	2.4709	50.00000	50.58480	ug/L	1	30	0.0500				
1,2,4-Trimethylbenzene	2.8989	2.8194	50.00000	48.62890	ug/L	-3	30	0.0500				
sec-Butylbenzene	3.7766	3.7282	50.00000	49.36010	ug/L	-1	30	0.0500				
para-Isopropyl Toluene	2.9265	3.0024	50.00000	51.29660	ug/L	3	30	0.0500				
1,3-Dichlorobenzene	1.7261	1.7824	50.00000	51.62900	ug/L	3	30	0.0500				
1,4-Dichlorobenzene	1.7791	1.8187	50.00000	51.11420	ug/L	2	30	0.0500				
n-Butylbenzene	2.8565	2.8483	50.00000	49.85600	ug/L	0	30	0.0500				
1,2-Dichlorobenzene	1.6521	1.6564	50.00000	50.12830	ug/L	0	30	0.0500				
1,2-Dibromo-3-Chloropropane	0.2548	0.2178	50.00000	42.73560	ug/L	-15	30	0.0500				
1,2,4-Trichlorobenzene	0.9217	1.0190	50.00000	55.27890	ug/L	11	30	0.0500				
Hexachlorobutadiene	0.5179	0.6138	50.00000	59.25890	ug/L	19	30	0.0500				
Naphthalene	2.1053	1.9819	50.00000	47.07030	ug/L	-6	30	0.0500				
1,2,3-Trichlorobenzene	0.9209	0.9823	50.00000	53.33360	ug/L	7	30	0.0500				
Dibromofluoromethane	0.7687	0.6921	50.00000	45.02250	ug/L	-10	30	0.0500				
1,2-Dichloroethane-d4	0.4119	0.3799	50.00000	46.11230	ug/L	-8	30	0.0500				
Toluene-d8	1.0037	0.9584	50.00000	47.74480	ug/L	-5	30	0.0500				
Bromofluorobenzene	1.0880	1.0182	50.00000	46.79290	ug/L	-6	30	0.0500				

ISTD (ICAL=fgf27)	ICAL	Area	Area	%Diff	ICAL	RT	RT	Diff
Pentafluorobenzene	1280892	1813325	41.57		9.02	9.02	0.00	
1,4-Difluorobenzene	2124066	2753923	29.65		10.51	10.51	0.00	
Chlorobenzene-d5	1735753	2208504	27.24		15.53	15.53	0.00	
1,4-Dichlorobenzene-d4	863989	1108124	28.26		19.83	19.83	0.00	

!=warning --low bias C=CCV
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INTERNAL STANDARD SUMMARY
Curtis & Tompkins Laboratories

Sequence Date: 20-JUL-2004
Sequence: 454291395
Instrument ID: MSVOA06

ICAL Filename: fgf27
Date Analyzed: 16-JUL-2004
Time Analyzed: 01:27

	IS1 (PFLBZ)	READING	RT	IS2 (14DFB)	READING	RT	IS3 (CLBZD5)	READING	RT	IS4 (DCBZ14D4)	READING	RT
ICAL STD	1280892	9.02		2124066	10.51		1735753	15.53		863989	19.83	
LOWER LIMIT	640446	8.52		1062033	10.01		867877	15.03		431995	19.33	
UPPER LIMIT	2561784	9.52		4248132	11.01		3471506	16.03		1727978	20.33	

TYPE	SAMPLE	#										
CCV	50PPB	003	1658399	9.01	2574460	10.50	2004429	15.52	970335	19.82		
CCV	50PPB	005	2136534	9.02	3224672	10.51	2540076	15.52	1289912	19.81		
LCS	QC258215	006	2364533	9.01	3559806	10.50	2877564	15.52	1478285	19.82		
BLANK	QC258216	008	875917	9.02	1593112	10.50	1393127	15.53	689209	19.82		
MSS	173495-002	009	2034017	9.01	3268113	10.50	2608956	15.52	1239837	19.82		
MS	QC258258	010	2255492	9.02	3515524	10.50	2852032	15.53	1461757	19.82		
MSD	QC258259	011	2320155	9.02	3571354	10.51	2878672	15.53	1485016	19.82		
CCV	50PPB	013	2058321	9.02	3187695	10.51	2518911	15.53	1264743	19.83		
CCV	50PPB	015	1480930	9.03	2364210	10.51	1833902	15.54	883328	19.83		
CCV	50PPB	017	1581713	9.02	2456391	10.51	1931051	15.53	957441	19.83		
CCV	50PPB	019	1813325	9.02	2753923	10.51	2208504	15.53	1108124	19.83		
BLANK	QC258217	021	1649427	9.02	2658820	10.51	2166283	15.53	1062374	19.82		
SAMPLE	173475-006	022	1746700	9.02	2788492	10.51	2061829	15.53	791752	19.83		
SAMPLE	173475-008	023	1562922	9.02	2492644	10.51	1841769	15.53	675047	19.83		
SAMPLE	173501-004	024	1677795	9.03	2736492	10.51	2235430	15.53	1050084	19.83		
SAMPLE	173501-005	025	1732539	9.02	2841382	10.51	2285189	15.53	1156084	19.83		
SAMPLE	173487-002	026	1528851	9.03	2507302	10.51	2063896	15.53	1047661	19.83		
SAMPLE	173495-001	027	1617716	9.02	2686409	10.51	2213855	15.53	1112729	19.82		
SAMPLE	173353-003	028	1534778	9.03	2383281	10.51	1587984	15.54	519296	19.83		
SAMPLE	173419-002	029	1702298	9.02	2754299	10.51	2313403	15.53	1149722	19.83		
SAMPLE	173419-003	030	1703076	9.03	2751409	10.51	2322510	15.54	1186530	19.83		
SAMPLE	173419-004	031	1689959	9.03	2750067	10.51	2267196	15.53	1117508	19.83		
SAMPLE	173501-006	032	1689572	9.02	2831452	10.51	2366261	15.53	1144509	19.83		

Sequence Summary
Curtis & Tompkins Laboratories

Sequence: 454284216 Instrument: MSVOA06
 Analytical Method: EPA 8260B

HP GCMS VOA 06
 SOP Version: 8260B_rv4

Begun: 15-JUL-2004

#	Filename	Type	Samplenum	Batch Matrix Analyzed	IDF	IQC SPK uL	VIL pH	Stds Used	>LR
001	fgf01	X	IB	15-JUL-2004 08:56	1.0	1	2	1	
002	fgf02	TUN	BFB	15-JUL-2004 09:32	1.0	1	3 4 5 1	not used	
003	fgf03	CCV	25PPB	15-JUL-2004 09:56	1.0	5000	6		
004	fgf04	TUN	BFB	15-JUL-2004 11:05	1.0				
005	fgf05	CCV	25PPB	15-JUL-2004 11:24	1.0	2	5000	3 4 5 1	CC-
006	fgf06	TUN	BFB adj	15-JUL-2004 12:44	1.0				
007	fgf07	CCV	25PPB	15-JUL-2004 13:03	1.0	1	5000	3 4 5 1	CC-
008	fgf08	TUN	BFB adj	15-JUL-2004 14:21	1.0				
009	fgf09	CCV	25PPB	15-JUL-2004 14:42	1.0	2	5000	3 4 5 1	CC-
010	fgf10	X	IB	15-JUL-2004 15:48	1.0				
011	fgf11	TUN	BFB	15-JUL-2004 16:30	1.0				
012	fgf12	X	IB	15-JUL-2004 16:46	1.0				
013	fgf13	X	CALIB IB	15-JUL-2004 17:20	1.0				
014	fgf14	ICAL	0.5/1PPB	15-JUL-2004 17:55	1.0				
015	fgf15	ICAL	5PPB	15-JUL-2004 18:30	1.0				
016	fgf16	ICAL	10PPB	15-JUL-2004 19:05	1.0				
017	fgf17	ICAL	20PPB	15-JUL-2004 19:40	1.0				
018	fgf18	ICAL	50PPB	15-JUL-2004 20:15	1.0				
019	fgf19	ICAL	75PPB	15-JUL-2004 20:49	1.0				
020	fgf20	ICAL	100PPB	15-JUL-2004 21:24	1.0				
021	fgf21	ICV	50PPB	15-JUL-2004 21:59	1.0				
022	fgf22	ICV	50PPB	15-JUL-2004 22:34	1.0				
023	fgf23	X	CALIB IB	15-JUL-2004 23:08	1.0				
024	fgf24	ICAL	5PPB	15-JUL-2004 23:42	1.0				
025	fgf25	ICAL	10PPB	16-JUL-2004 00:17	1.0				
026	fgf26	ICAL	20PPB	16-JUL-2004 00:52	1.0				
027	fgf27	ICAL	50PPB	16-JUL-2004 01:27	1.0				
028	fgf28	ICAL	62.5PPB	16-JUL-2004 02:02	1.0				
029	fgf29	ICAL	75PPB	16-JUL-2004 02:37	1.0				
030	fgf30	ICAL	100PPB	16-JUL-2004 03:11	1.0				

Stds used: 1=04WS1255 2=04WS0483 3=04SS242 4=04WS1132B 5=04WS1278A 6=04WS1238 7=04WS1304A 8=04WS1032C 9=04WS1032D
 Flags used: -=low bias CC=CCV CCC failure t=tune failure ✓ (CAL - OK)

Analyst: Blk Date: 7/16/04
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8260S 104
 SEQUENCE SUMMARY
 Curtis & Tompkins Laboratories

Sequence: 454284216 Instrument: MSVOA06 HP GCMS VOA 06
 Analytical Method: EPA 8260B SOP Version: 8260B_rv4

Begun: 15-JUL-2004

#	Filename	Type	Samplenum	Batch	Matrix Analyzed	IDF	IOC	SPK	uL	VL	PH	Stds	Used	>LR
031	fgf31	ICV	50PPB	50PPB	16-JUL-2004	03:46	1.0			5000	7	1		
032	fgf32	ICV	50PPB	50PPB	16-JUL-2004	04:21	1.0			5000	7	1		
033	fgf33	X	IB	IB	16-JUL-2004	04:56	1.0							
034	fgf34	X	IB	IB	16-JUL-2004	05:31	1.0							
035	fgf35	X	IB	IB	16-JUL-2004	06:06	1.0							

Stds used: 1=04WS1255 2=04WS0483 3=04SS242 4=04WS1132B 5=04WS1278A 6=04WS1238 7=04WS1304A 8=04WS1032C 9=04WS1032D
 Flags used: -=low bias cc=CCV CCC failure t=tune failure

Analyst: RBC Date: 7/16/04
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7/16/04
RBC

SEQUENCE SUMMARY
Curtis & Tompkins Laboratories

Sequence: 454291395 Instrument: MSVOA06 HP GCMS VOA 06
Analytical Method: EPA 8260B SOP Version: 8260B_rv4

Begun: 20-JUL-2004

#	Filename	Type	Samplenum	Batch	Matrix Analyzed	IDF	IQC SPK uL	VL pH	Stds Used	>LR	
001	fgk01	X	IB		20-JUL-2004 08:35 1.0	1			1		
002	fgk02	TUN	BFB	<i>high bias</i>	20-JUL-2004 09:10 1.0	3			2		
003	fgk03	CCV	50PPB		20-JUL-2004 09:29 1.0	3	5000		3 4 1 CC+		
004	fgk04	TUN	BFB		20-JUL-2004 10:18 1.0				5		
005	fgk05	CCV	50PPB		20-JUL-2004 10:34 1.0		5000		3 4 1		
006	fgk06	LCS	QC258215	✓ 92984 Soil	20-JUL-2004 11:26 1.0	1	2	5000		6 7 1	
007	fgk07	X	IB		20-JUL-2004 12:00 1.0				1		
008	fgk08	BLANK	QC258216	✓ 92984 Soil	20-JUL-2004 12:35 1.0	1	5000		1		
009	fgk09	MSS	173495-002	✓ 92984 Soil	20-JUL-2004 13:10 0.9259	1	5000		A	1	
010	fgk10	MS	QC258258	✓ 92984 Soil	20-JUL-2004 13:45 0.9259	1	5000		1		
011	fgk11	MSD	QC258259	✓ 92984 Soil	20-JUL-2004 14:20 0.9259	1	5000		1		
012	fgk12	TUN	BFB		20-JUL-2004 15:06 1.0	5	5000		1		
013	fgk13	CCV	50PPB		20-JUL-2004 15:23 1.0	5	5000		1 3 4 CC-		
014	fgk14	TUN	BFB		20-JUL-2004 16:04 1.0				5		
015	fgk15	CCV	50PPB		20-JUL-2004 16:21 1.0	2	5000		1 3 4 CC+		
016	fgk16	TUN	BFB <i>adj</i>	<i>fun</i>	20-JUL-2004 17:08 1.0				5		
017	fgk17	CCV	50PPB		20-JUL-2004 17:25 1.0	2	5000		1 3 4 CC+		
018	fgk18	TUN	BFB <i>adj</i>	<i>fun</i>	20-JUL-2004 18:10 1.0				5		
019	fgk19	CCV	50PPB		20-JUL-2004 18:27 1.0		5000		1 3 4		
020	fgk20	X	IB		20-JUL-2004 19:02 1.0				1		
021	fgk21	BLANK	QC258217	✓ 92984 Soil	20-JUL-2004 19:37 1.0	1	5000		1		
022	fgk22	SAMPLE	173475-006	92984 Soil	20-JUL-2004 20:33 1.064		5000		B	1	
023	fgk23	SAMPLE	173475-008	92984 Soil	20-JUL-2004 21:08 1.111		5000		1		
024	fgk24	SAMPLE	173501-004	92984 Soil	20-JUL-2004 21:43 1.163		5000		D	1	
025	fgk25	SAMPLE	173501-005	92984 Soil	20-JUL-2004 22:18 0.9615		5000		1		
026	fgk26	SAMPLE	173487-002	92984 Soil	20-JUL-2004 22:53 1.22		5000		C	1	
027	fgk27	SAMPLE	173495-001	92984 Soil	20-JUL-2004 23:29 0.9615		5000		A	1	
028	fgk28	SAMPLE	173353-003	92984 Soil	21-JUL-2004 00:04 0.9804	1	1	5000		173EBR, Acc#:MTLNCL=164.831	
029	fgk29	SAMPLE	173419-002	92984 Soil	21-JUL-2004 00:39 0.9259		5000		B	1	
030	fgk30	SAMPLE	173419-003	92984 Soil	21-JUL-2004 01:14 1.0		5000		1		

Stds used: 1=04WS1255 2=04WS0483 3=04SS250 4=04WS1132C 5=04WS1238 6=04WS1304C 7=04WS1032D

Flags used: +=high bias -=low bias cc=CCV CCC failure *=AT-OK, LU-OK

* Cuv - FGKDS - OK, LUOK - MTHSFE, 2344, 12033CP, HxCbba↑
FGK19 - CK, LUOK - RSVME, CIE↓

Analyst: BHQ Date: Hillier
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07/24/04

SEQUENCE SUMMARY
Curtis & Tompkins Laboratories

Sequence: 454291395 Instrument: MSVOA06 HP GCMS VOA 06
Analytical Method: EPA 8260B SOP Version: 8260B_rv4

Begun: 20-JUL-2004

#	Filename	Type	Samplenum	Batch	Matrix Analyzed	IDF	IQC	SPK	uL	VL	pH	Stds	Used	>LR
031	fgk31	SAMPLE	173419-004	92984	Soil	21-JUL-2004	01:49	0	9434	5000	B	7	1	
032	fgk32	SAMPLE	173501-006	92984	Soil	21-JUL-2004	02:23	-1	0.087	5000	E	7	1	12.257
033	fgk33	X	CCV TEST			21-JUL-2004	02:58		1.0				2: MIBK=110.632	1
034	fgk34	X	IB			21-JUL-2004	03:33		1.0					1
035	fgk35	X	IB			21-JUL-2004	04:09		1.0					1
036	fgk36	X	IB			21-JUL-2004	04:44		1.0					1
037	fgk37	X	6A			21-JUL-2004	05:19		1.0					1
038	fgk38	X	6B			21-JUL-2004	05:54		1.0					1

Stds used: 1=04WS1255 2=04WS0483 3=04SS250 4=04WS1132C 5=04WS1238 6=04WS1304C 7=04WS1032D
Flags used: +=high bias -=low bias CC=CCV CCC Failure

Analyst: Bio
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Date: 7/21/04

*bio
7/21/04*

MSVOA SOIL PREP L

CURTIS & TOMPKINS, LTD.

Date: 7/26/01

Prepped by: *TJ*

8260 5030

	Sample ID	grams/ mLs	core#	Meoh	inst.	COMMENTS	hold date	due date
1	173353-3	5.1	A		6	RR 1X 1STD out		
2	173419-2	5.4	B			-		
3	1 - 3	5.0						
4	↓ - 4	5.3	↓		↓			
5	173466-1	5.4	A		3	in Fridge		
6	173495-1	5.2			6			
7	↓ - 2	5.4	↓		36	MSS/MTS/MSD		
8	173480-5	5.0	A		3	RR 1Y COMP 1-4 DS 1		
9	10	5.2			↓	COMP 6 9 ↓		
10	173761-10	5.1	↓		↓	RR 1X DS 1 MSS/MS/MSD		
11	173457-2	0.005mL	D		3	RR 10,000X (5.4L of 10x) NAAH 0.8ppb on column		
12	173315-1	0.2mL	A			RR 25X		
13	173371-1	0.001mL	F			RR 5,000X		
14	↓ - 2	↓	C		↓	RR 5,000X		
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								

ENCORE 8260/5035

	Sample ID	grams/ mLs	core#	Meoh	inst.	COMMENTS	hold date	due date
1	173475-6	4.7	B		6	RR 1X 1STD out 39.1-34.4		
2	↓ - 8	4.5	↓		↓	↓ 39.0-34.5		
3	173501-1	5.3	E	X	3	RR 1000X screen		
4	↓ - 3	4.1	E	X	↓	↓		
5	↓ - 4	4.3	D		6	RR 1X 100/		
6	↓ - 5	5.2	↓		↓	↓		
7	↓ - 6	4.5	D	X	3	1000X screen		
8	↓ - 6	4.6	E		6	1X		
9	173487-2	4.1	C		6	in Fridge		V
10	173460-5					4410		
11	↓ - 10							
12								
13								
14								
15								
16								
17								

Percent Moisture Summary Report

Batch: 93123
 Date: 07/23/04
 Method: CLP SOW 390
 Analyst: RSM

Sample	Tare (g)	Wet (g)	Dry (g)	Percent Solids	Percent Moisture
173417-001	15.2300	22.6376	20.7890	75	25
173417-003	15.3696	23.5203	22.1555	83	17
173417-005	15.1797	22.8460	21.9640	88	12
173419-001	15.3788	22.5751	21.1530	80	20
173419-002	15.4267	22.3769	21.0058	80	20
173419-003	15.2867	22.5232	19.6139	60	40
173419-004	15.3320	22.0880	19.8251	67	33
173495-001	15.5748	22.9217	21.2334	77	23
173495-002	15.5245	22.6778	21.3593	82	18
QC258743	15.4615	22.5328	20.7158	74	26
of 173417-001			RPD:	1.0%	2.9%

Appendix F-2

FDS Sections CF-4 and CF-12 Historical Documents (From Corrective Action Plan Implementation and Closure Report, Commissary/PX Area. Geomatrix, 2008)

A portion of an existing active 6-inch diameter waterline and a fire hydrant within the TPHg Source Area were removed to facilitate removal of soil (Figure 4). The waterline and hydrant were replaced by the Trust Utility Department during backfilling of this area.

3.4.2.2 Excavation of Soil in the Test Trench No. 1 Area

Test Trench No. 1 was excavated on August 30, 2006 to investigate the eastern extent of asphalt- and coal-containing layers observed in the TPHg Source Area (refer to Section 4.2). Because fuel-related hydrocarbons were found in a discrete fill layer at Test Trench No. 1, additional excavation was conducted. Two iterations of over-excavation were performed on November 16 and December 5, 2006. The extent of the Test Trench No. 1 Area excavation and confirmation sample locations are shown on Figure 5. The maximum depth of Test Trench No. 1 was 3.5 feet. Approximately 130 cubic yards of soil was excavated and stockpiled in the soil staging area.

3.4.2.3 Excavation of Soil in Building 626 Area

Excavation in the Building 626 Area began on August 21, 2006 and was completed on August 26, 2007. The extent of the Building 626 Area excavation and confirmation sample locations are shown on Figure 6. Soil in the Building 626 Area was excavated to a depth of approximately 10 feet bgs per the CAP Work Plan. Additional soil adjacent to the planned Building 626 soil removal area was excavated to slope excavation sidewalls to maintain stability. No over-excavation of soil was required for the Building 626 Area excavation based on confirmation sampling results (refer to Section 4.3). Approximately 500 cubic yards of soil was excavated from the Building 626 Area and stockpiled in the soil staging area.

A portion of an existing active 6-inch diameter waterline within the TPHg Source Area was removed to facilitate removal of soil (Figure 6). The waterline was replaced by the Trust Utility Department during backfilling of this area.

3.4.2.4 Excavation of Soil in FDS Area 1

Excavation in FDS Area 1 began on August 29, 2006 and was completed on October 10, 2006. The extent of excavation in FDS Area 1 and confirmation sample locations are shown on Figure 7. FDS Area 1 was initially excavated to a depth of 3 feet bgs per the CAP Work Plan. The excavation was later deepened to 6 feet bgs (refer to Section 4.4). Approximately 250 cubic yards of soil was excavated from FDS Area 1 and stockpiled in the soil staging area.

3.4.2.5 FDS Area 2

FDS Area 2, located within Mason Street (Figure 3A), had a planned excavation depth of 3 feet bgs per the CAP Work Plan. FDS Area 2 was not excavated for the reasons described in Section 4.5.

3.4.2.6 Excavation of Impacted Soil in FDS Area 3

Excavation in FDS Area 3 began on September 5, 2006 and was completed on April 16, 2007. As described in the CAP Work Plan, FDS Area 3 was divided into two areas, the northern portion within the vegetated area of Crissy Field and the southern portion within the pedestrian and bicycle path. The extent of the FDS Area 3 and confirmation sample locations are shown on Figure 8.

The planned depth of excavation in the FDS Area 3 was 3 feet bgs. The excavation was deepened to 7 feet bgs and extended to the west, east, and north during two phases of over-excavation. Approximately 1,200 cubic yards of soil was excavated from FDS Area 3 and stockpiled in the soil staging area.

An existing under drain structure in FDS Area 3 which was removed during excavation was replaced by the Contractor during backfill activities. The under drain structure consists of 6- and 8-inch diameter perforated plastic pipe surrounded by gravel and wrapped in geotextile filter fabric.

3.4.2.7 Excavation of Impacted Soil in Building 628 Area #2

Excavation in Building 628 Area #2 was completed on April 3, 2008. The extent of excavation in Building 628 Area #2 and confirmation sample locations are shown on Figure 9.

Approximately 12 cubic yards of soil was excavated from Building 628 Area #2 and stockpiled in the soil staging area.

3.4.2.8 Excavation of Impacted Soil in Pipeline “A” Area #1

Excavation in Pipeline “A” Area #1 was completed on April 3, 2008. The extent of excavation in Pipeline “A” Area #1 and confirmation sample locations are shown on Figure 10.

Approximately 12 cubic yards of soil was excavated from Pipeline “A” Area #1 and stockpiled in the soil staging area.

the eight confirmation soil samples collected from the Building 626 Area. Based on these results, the Building 626 Area Excavation was backfilled as described in Section 3.8.2.

Additional discussion regarding the results of confirmation soil sampling in the Building 626 Area is provided in a letter from the Trust to the RWQCB dated September 19, 2006 (see Appendix G). The extent of excavation in the Building 626 Area and confirmation soil sampling locations are shown on Figure 6. Building 626 Area confirmation sampling results are summarized in Table 9 and copies of analytical reports are provided as Appendix Q.

4.4 FDS AREA 1

Upon completion of excavation to the specified depth of 3-feet bgs in FDS Area 1, seven sidewall and two bottom confirmation samples were collected and analyzed for the constituents described in the CAP Work Plan. Upon review of as-built drawings for the recent Crissy Field construction project, the Trust recognized that approximately three feet of new fill may have been placed in the vicinity of the FDS Area 1 excavation after the original sample containing TPH above CULs was collected. Therefore, the Trust directed the Contractor to deepen the excavation an additional 3-feet, to a total depth of approximately 6 feet bgs. Two new bottom confirmation soil samples were collected and analyzed for the constituents specified in the CAP Work Plan.

No COCs were detected above soil CULs in the nine confirmation samples (seven sidewall samples and two bottom samples collected at 6-feet bgs) collected from the FDS Area 1 except for nickel, chromium, and zinc in four samples. These three metals (Ni, Cr, and Zn) were detected at concentrations exceeding CULs, which are based on background concentrations for beach/dune sand, but less than human health criteria for unrestricted use. The elevated concentrations of the metals were determined to be associated with fragments of serpentinite fill and are, therefore, considered to be an ambient condition not associated with a release. For this reason, additional excavation to address the detected metals was not required and the FDS Area 1 excavation was backfilled as described in Section 3.6.2. Additional discussion regarding elevated metal concentrations detected in soil from FDS Area 1 is provided in a letter from the Trust to the DTSC dated January 23, 2007 (see Appendix G). The DTSC provided concurrence that additional excavation to address the detected metals was not required in their letter to the Trust dated February 27, 2007 (see Appendix G).

Additional discussion regarding the results of confirmation soil sampling in FDS Area 1 are provided in a letter from the Trust to the RWQCB dated March 29, 2007 (see Appendix G).

The extent of excavation in FDS Area 1 and confirmation soil sampling locations are shown on Figure 7. FDS Area 1 confirmation sampling results are summarized in Table 10 and copies of analytical reports are provided as Appendix R.

4.5 FDS AREA 2

Soil in FDS Area 2 was not excavated for the following reasons:

- FDS Area 2 was identified based on a single detection of TPH_{fo} at 210 mg/kg, which is slightly above the Saltwater Ecological Protection Zone CUL of 144 mg/kg, but well below all other applicable CULs including the Ecological Buffer Zone (Terrestrial) CUL (980 mg/kg), the Human Health Residential CUL (1,900 mg/kg), and the Human Health Recreational CUL (4,500 mg/kg).
- FDS Area 2 is located outside the 150-foot buffer zone around the current Crissy Field Marsh shoreline. Therefore, the petroleum hydrocarbon impacts at FDS Area 2 are not likely impacting the Crissy Field Marsh in its current configuration.
- TPH_{fo} detections in other portions of the Study Area appear to be due to discrete, thin fill layers that contain asphalt, coal, and/or non-mobile residual hydrocarbons and/or naturally-occurring, non-petroleum, polar organics that were not sufficiently removed by the silica gel cleanup procedure.

Additional information supporting the Trust's recommendation to not excavate FDS Area 2 was outlined in a letter from the Trust to the RWQCB dated May 2, 2007 (see Appendix G).

4.6 FDS AREA 3

FDS Area 3 was excavated in two portions; the northern portion on the vegetated area of Crissy Field and the southern portion on the pedestrian and bicycle path (Figure 8). The northern portion of FDS Area 3 was backfilled prior to excavation of the southern portion. Confirmation soil samples were not collected from the temporary south sidewall of the northern excavation, because this soil was subsequently removed as part of the southern excavation.

Upon completion of the initial excavation in the northern portion of FDS Area 3, five sidewall and two bottom confirmation samples and one confirmation sample beneath a concrete encased abandoned utility were collected and analyzed for the constituents described in the CAP Work Plan. The sidewall confirmation samples were collected from depths between 2.5-feet bgs and 3.5-feet bgs, where impacted soil had been observed. Initial bottom confirmation samples were collected from a depth of 4 feet bgs. TPH at concentrations above CULs were detected in two

confirmation samples from the west half of the excavation bottom [Sample FDS3EX02(4)] and from the north sidewall [Sample FDS3EX03(2.5)] (see Table 11).

Based on these results, the Trust directed the Contractor to excavate three trenches to assess the lateral extent of contaminated soil. One trench was extended west from the west sidewall and two were extended north from the north sidewall (Figure 8). Based on the field screening and analytical results from the trenches (Table 11), lateral over-excavation of the west sidewall (10 feet), north sidewall (15 feet), and east sidewall (10 feet) and vertical over-excavation of the entire bottom of the excavation to 7 feet bgs was completed and a second round of confirmation samples were collected and analyzed per project requirements. One confirmation sample from the west sidewall [Table 11; Sample FDS3EX15(6)] contained TPH concentration above CULs. To address impacted soil at location FDS3EX15(6), the corresponding portion of the west sidewall was over-excavated an additional 5 feet and two additional sidewall and one additional bottom confirmation samples were collected and analyzed [Table 11; Samples FDS3EX25(5.5), FDS3EX26(5.5), and FDS3EX27(7)]. TPH concentrations in these samples were below CULs.

The southern portion of FDS Area 3 was excavated to a depth of 7-feet bgs, 4 feet deeper than the design depth in the CAP Work Plan, based upon findings from excavation of the northern portion. Upon completion of excavation of the southern portion, five sidewall and three bottom confirmation samples were collected and analyzed for the constituents described in the CAP Work Plan. The sidewall confirmation samples were collected from depths of 5.8-feet bgs and 6.0-feet bgs, the depth corresponding to where impacted soil was observed. Bottom confirmation soil samples were collected from depths between 7.0-feet bgs and 7.5-feet bgs.

No COCs were detected above CULs in the 24 final confirmation soil samples collected from the FDS Area 3 except for nickel, chromium, and zinc in seven samples (Table 11). These three metals (Ni, Cr, and Zn) were detected at levels exceeding CULs, which are based on background concentrations for beach/dune sand, but less than human health criteria for unrestricted use. The elevated concentrations of the metals appear to be associated with fragments of serpentinite fill and are, therefore, considered to be an ambient condition not associated with a release. For this reason, additional excavation to address the detected metals was not required and the FDS Area 3 excavation was backfilled as described in Section 3.6.2. Additional discussion regarding elevated metal concentrations detected in soil from FDS Area 3 is provided in a letter from the Trust to the DTSC dated January 23, 2007 (see

Appendix G). The DTSC provided concurrence that additional excavation to address the detected metals was not required in their letter to the Trust dated February 27, 2007 (see Appendix G).

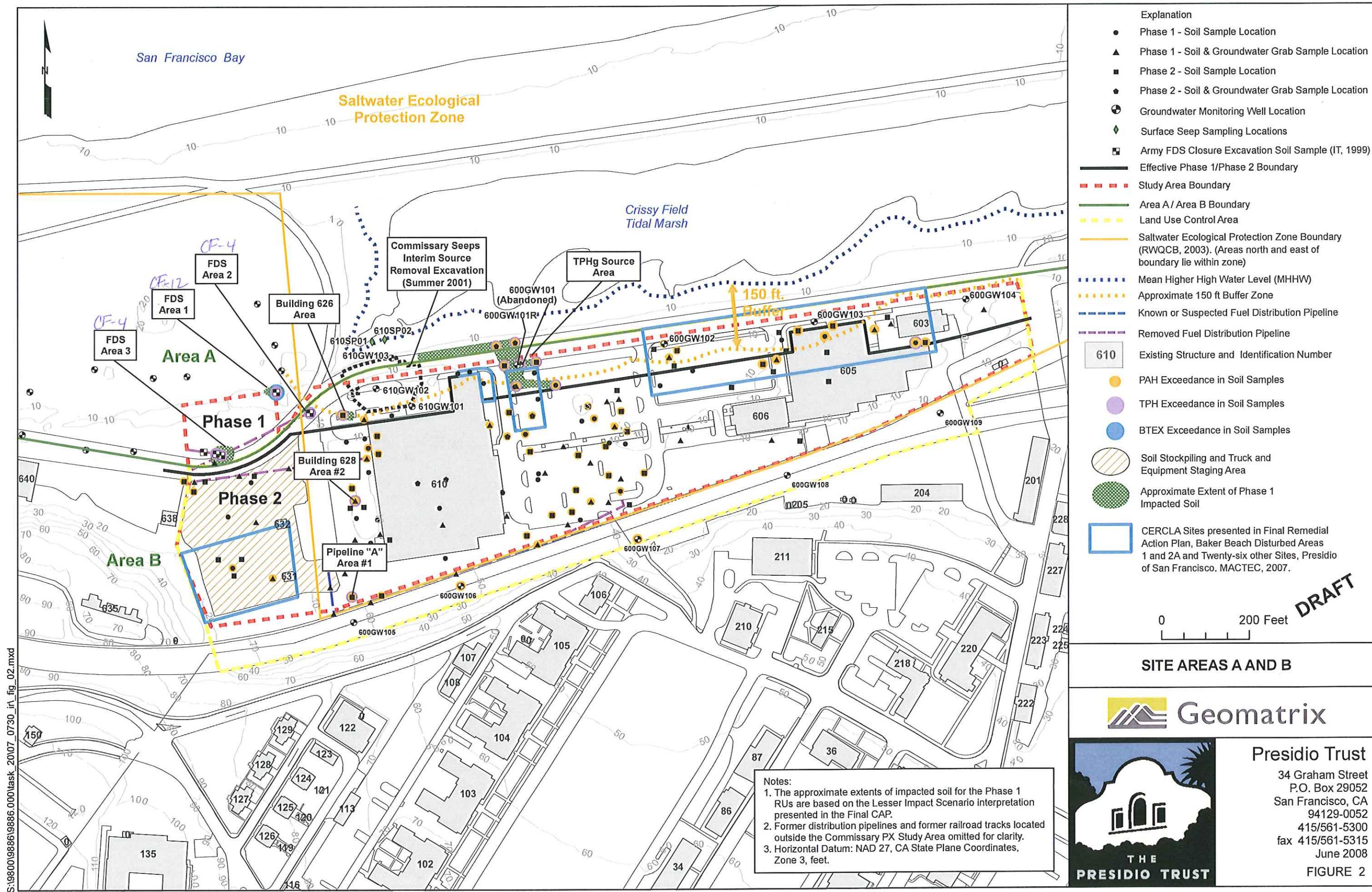
Confirmation soil samples in the FDS Area 3 were analyzed for metals that were not specified in the Revised Final CAP. In some cases, the additional metals analyses were requested to evaluate ambient metals concentrations in fill material and in other cases, the additional metals analyses were performed because of an error in completing the chain-of-custody. Fifteen confirmation soil samples (Samples FDS3EX13 through FDS3EX27) were analyzed for the Title 22 suite of metals rather than for only metals involved in the evaluation of serpentinite fill and ambient conditions, as described above. Analytical results of metals for these samples were below CULs except for five samples (Samples FDS3EX14, 21, 22, 24, and 26) where concentrations of chromium, nickel, and zinc above CULs have been attributed to serpentinite fill (see above). Additionally, arsenic was detected slightly above the CUL for arsenic in beach dune sand (5.9 mg/kg) in 4 of the 15 samples analyzed for Title 22 metals in FDS Area 3². All samples exceeding the arsenic CUL were collected in Bay Mud. The concentrations of arsenic detected (0.39 to 8.3 mg/kg) are within the range of ambient arsenic concentrations observed in Bay Mud (Hunt, et al., 1998).

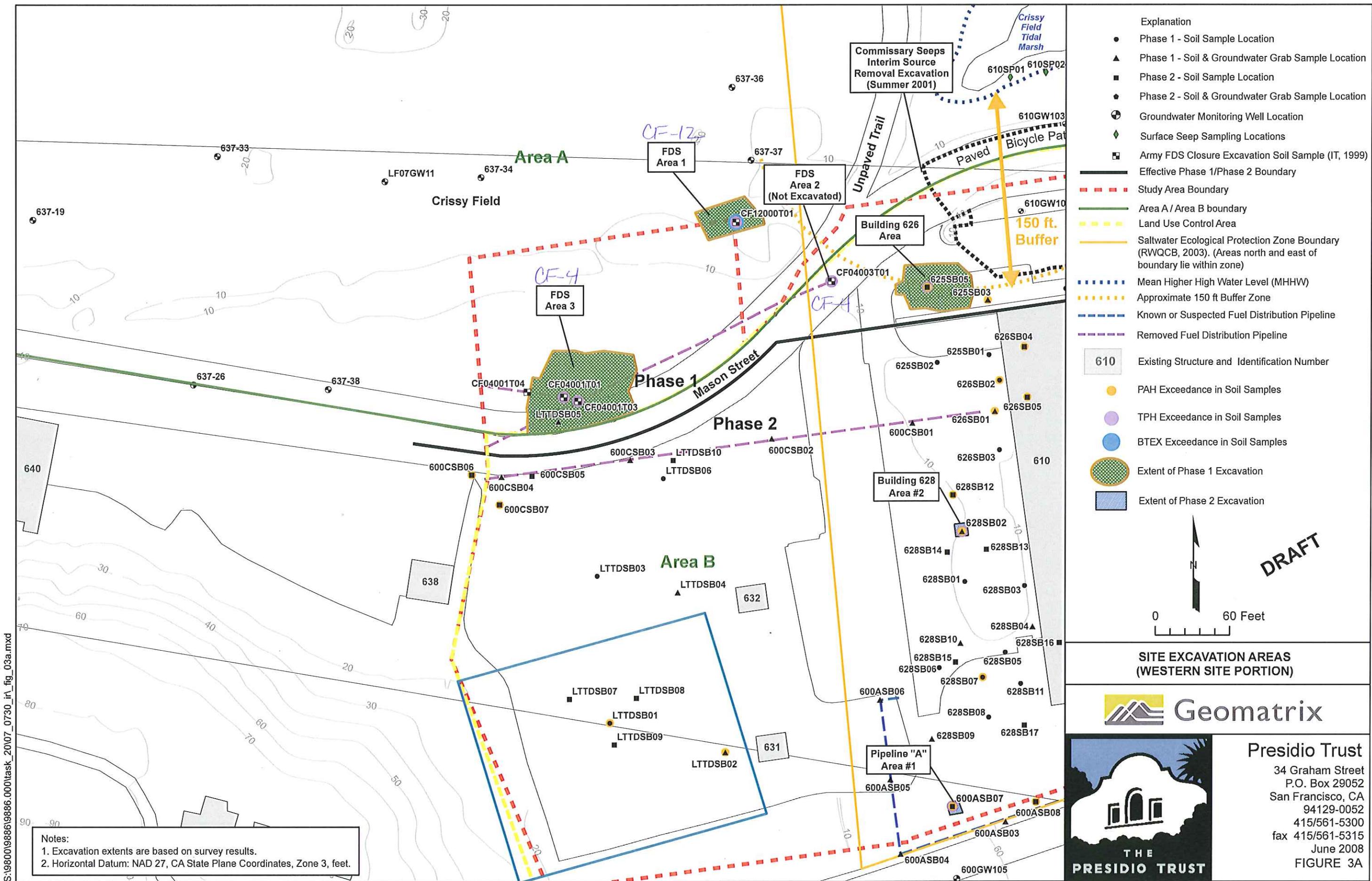
Additional discussion regarding the results of confirmation soil sampling in FDS Area 3 are provided in letters from the Trust to the RWQCB dated March 29, 2007 and May 4, 2007 (see Appendix G). The extent of excavation in FDS Area 3 and confirmation soil sampling locations are shown on Figure 8. FDS Area 3 confirmation sampling results are summarized in Table 11 and copies of analytical reports are provided as Appendix S.

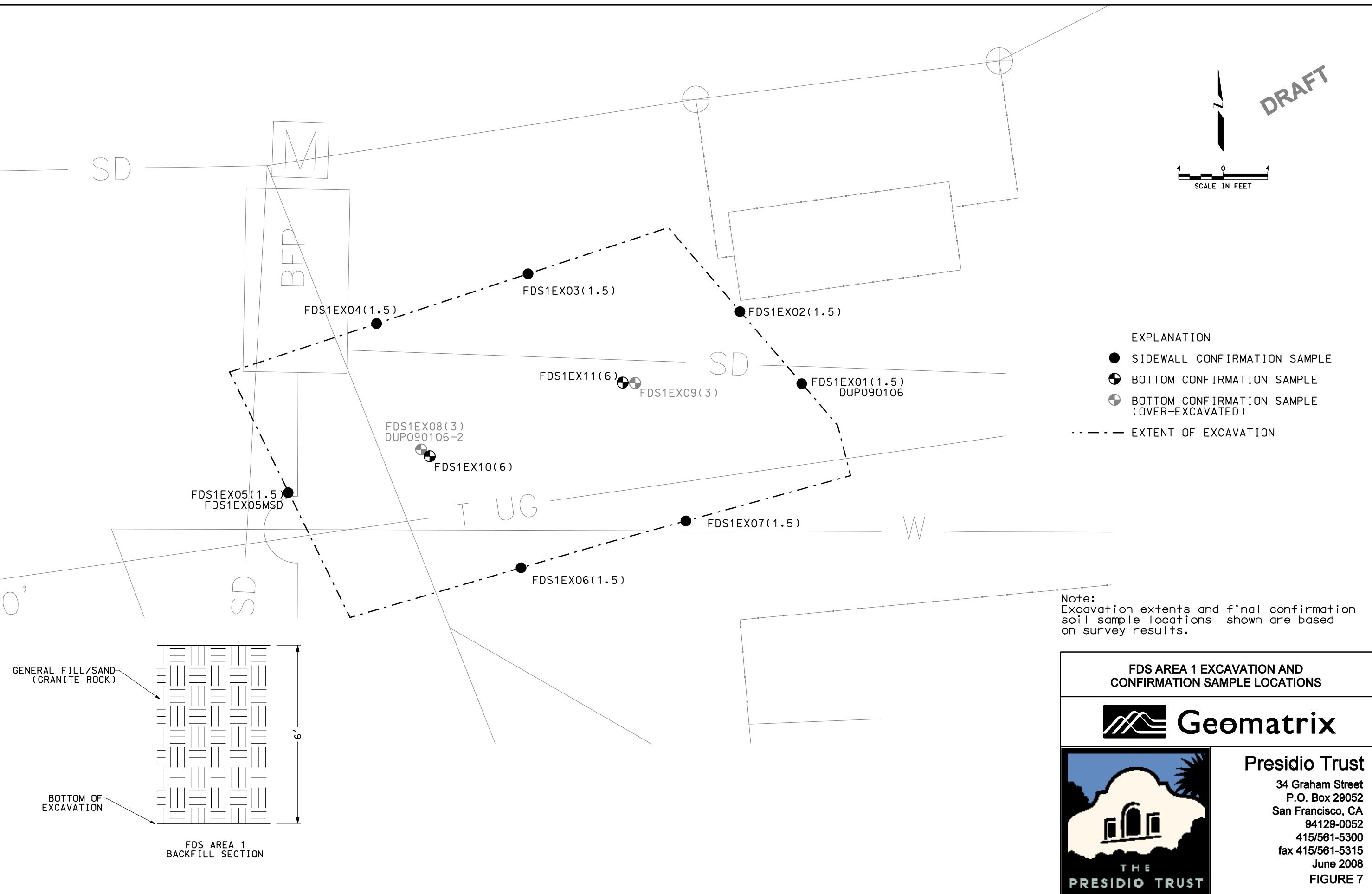
4.7 BUILDING 628 AREA #2

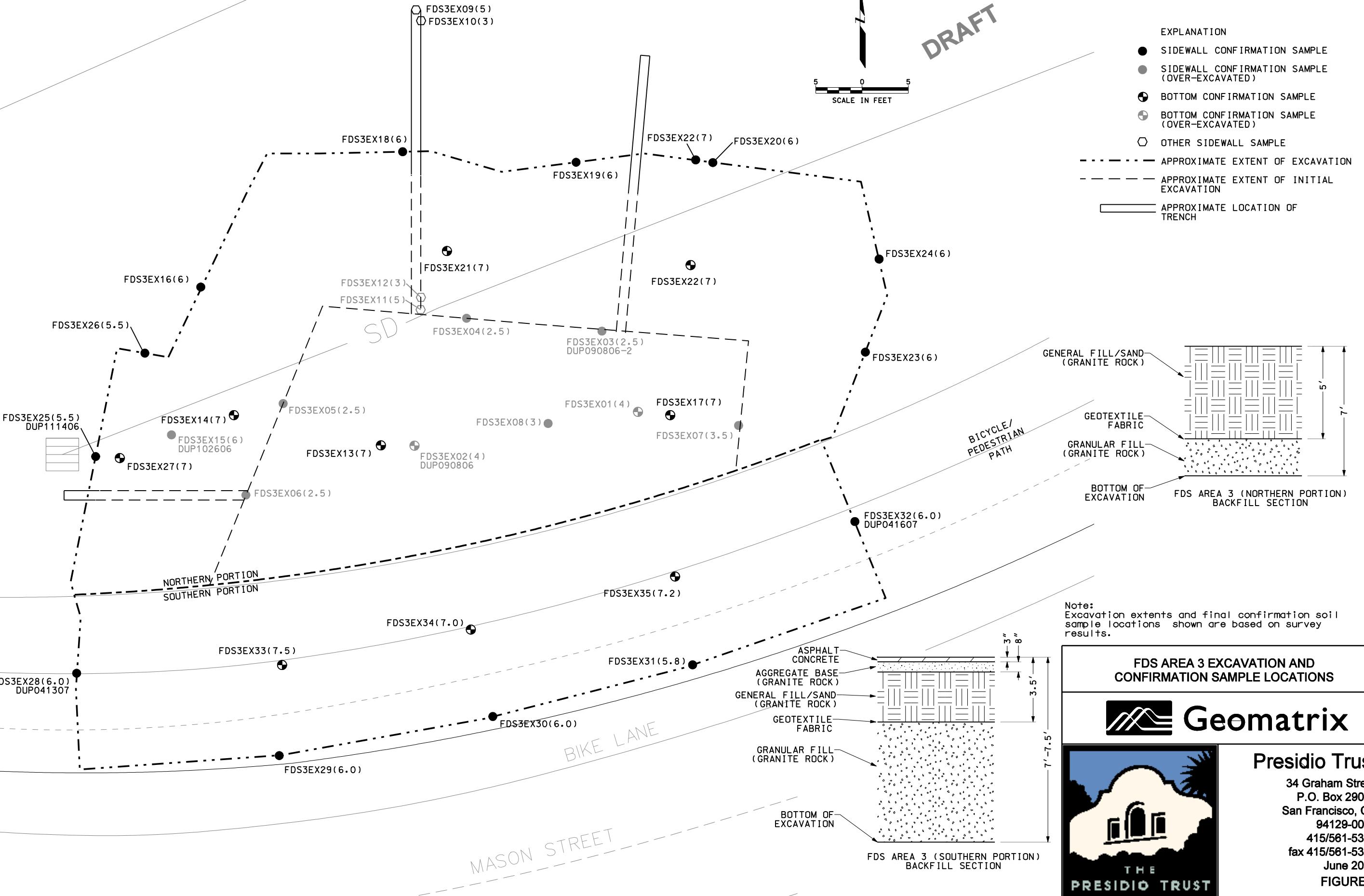
Upon completion of excavation in Building 628 Area #2, four sidewall and one bottom confirmation sample were collected and analyzed for the constituents described in the CAP Work Plan. The sidewall samples were collected from a depth 1.5 feet bgs and the floor sample was collected from a depth of 3 feet bgs. The extent of excavation in Building 628 Area #2 and confirmation soil sampling locations are shown on Figure 9. Confirmation soil sampling results for Building 628 Area #2 are presented in Table 12 and copies of analytical reports are provided as Appendix T.

2. Although arsenic is not a COC, detected concentrations of arsenic exceed the applicable CUL specified in the Revised Final CAP (T&R, 2006) and Cleanup Levels Document (EKI, 2002).

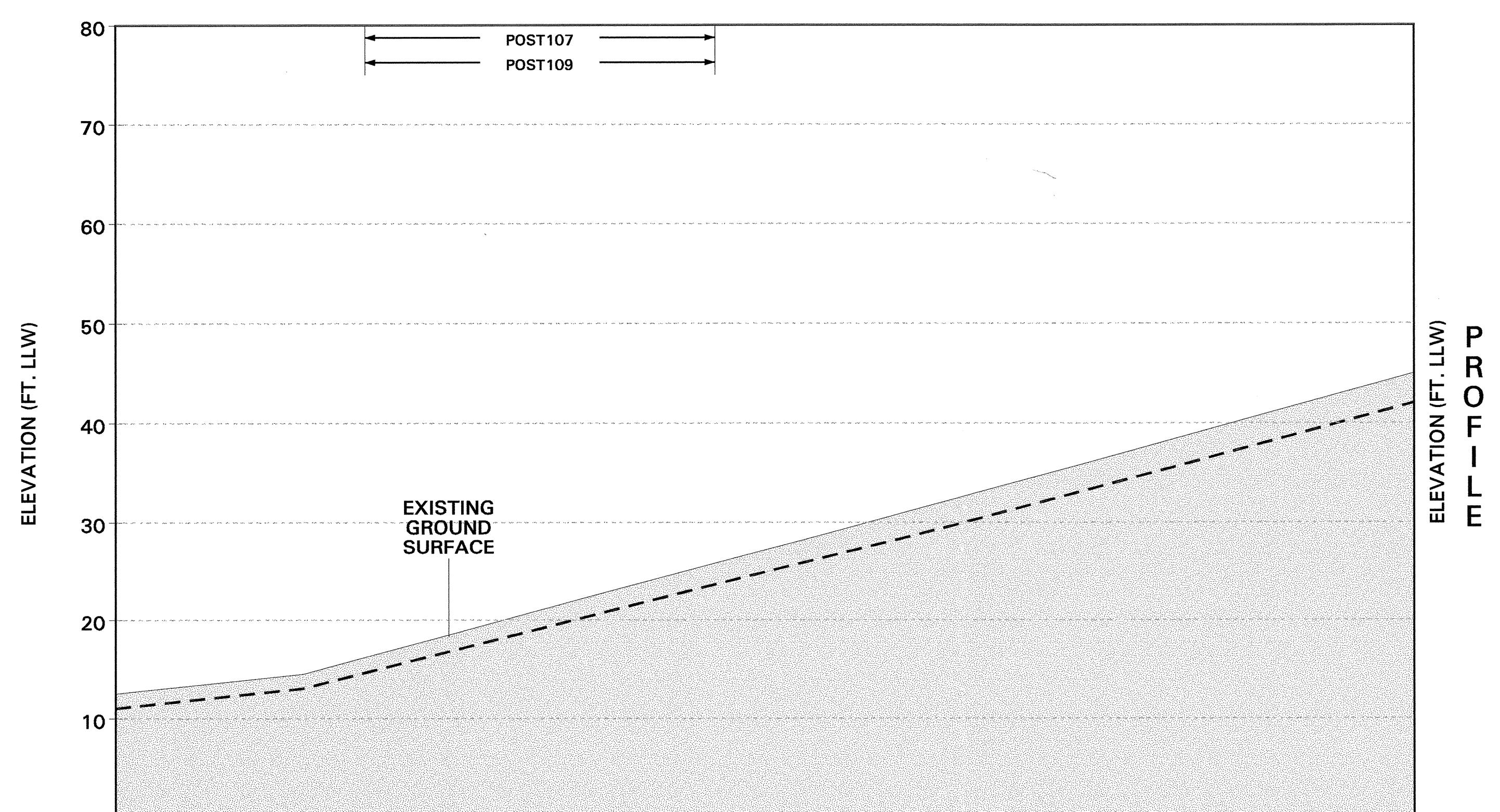
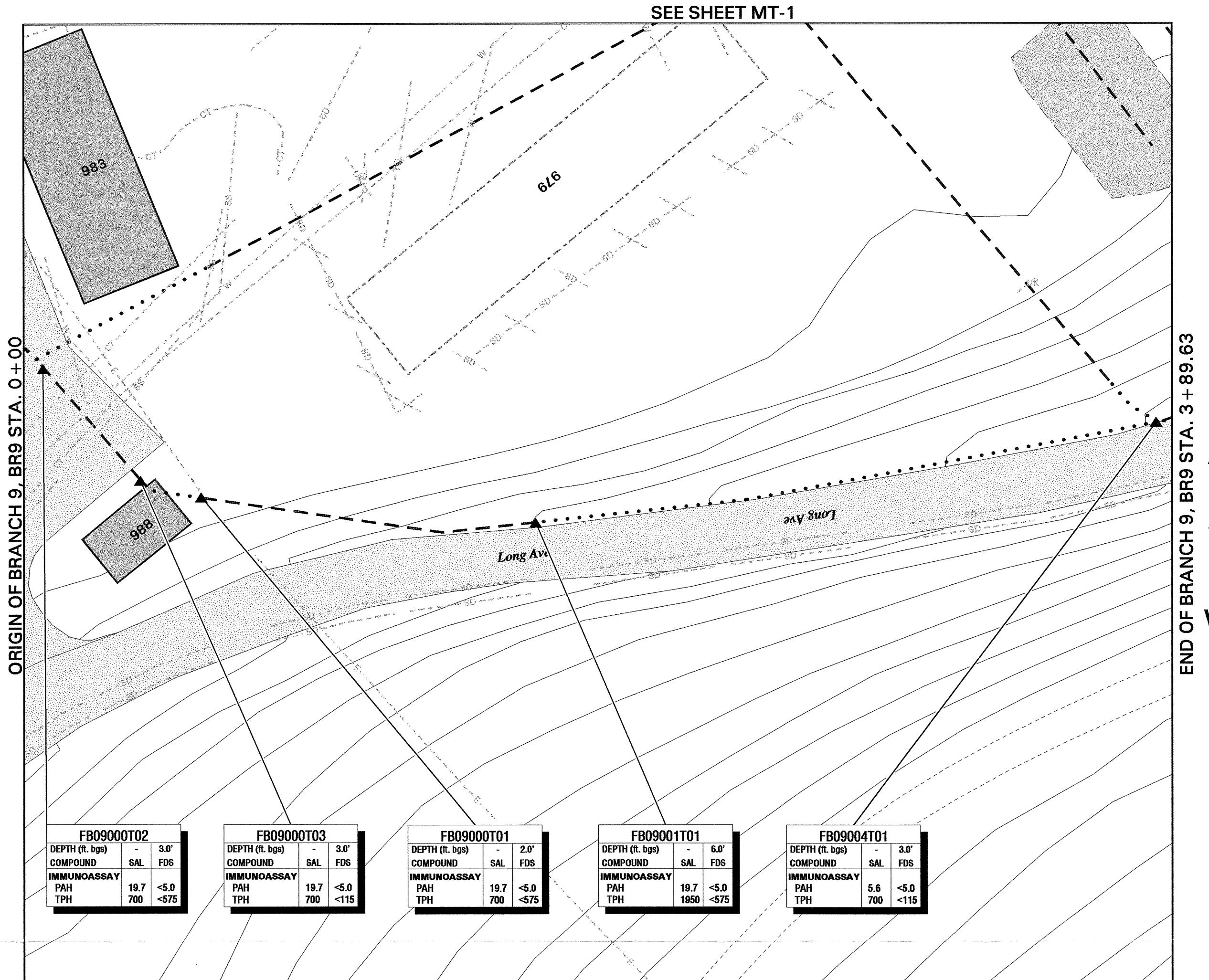








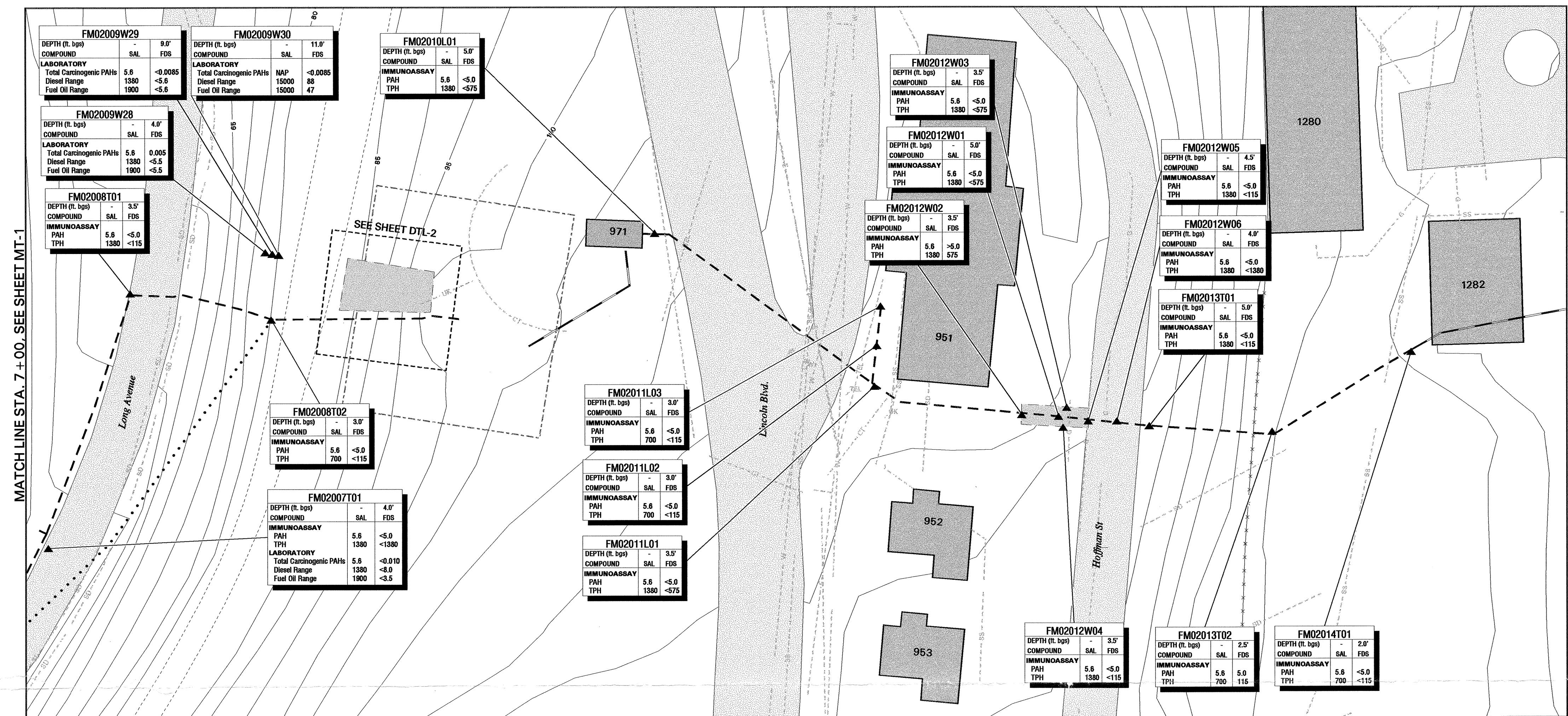
Appendix G
Selected Excerpts from FDS Removal Report (IT, 1999)



HORIZONTAL SCALE: 1" = 30'

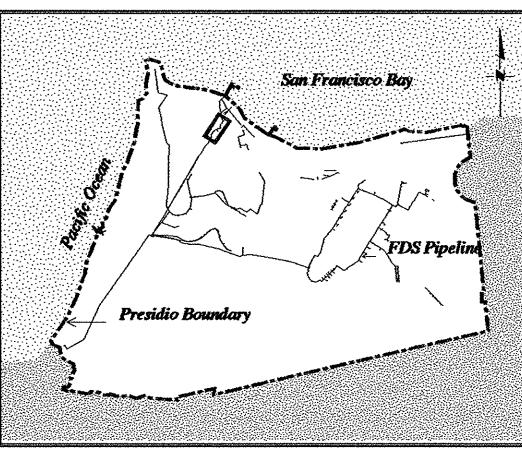
LTTD Soil Sample Analytical Results		
Analyte (unit of measure)	POST107	POST109
Total Petroleum Hydrocarbons (mg/kg)	70	51
BTEX (mg/kg)		
Benzene	<0.006	<0.006
Ethylbenzene	<0.006	<0.006
Toluene	<0.006	<0.006
Xylenes (total)	<0.006	<0.006
Total Carcinogenic PAHs (mg/kg)	0.36	0.93
Immunoassay-PAHs (mg/kg)	RS	RS
SPLP (μ g/l)		
Diesel Range	NA	NA
Gasoline Range	NA	NA
Benzene	NA	NA
Ethylbenzene	NA	NA
Toluene	NA	NA
Xylenes (m&p-)	NA	NA
Xylenes (o-)	NA	NA

04-02-99	FDS PIPELINE REMOVAL, SUBMITTAL TO USACE		
ON	DATE	DESCRIPTION	BY B
 MONTGOMERY WATSON		DEPARTMENT OF THE ARMY SACRAMENTO DISTRICT, CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA	
SIGNED: MAKHOLOUF NN: ENNEDY CKED:		PRESIDIO OF SAN FRANCISCO CALIFORNIA REMOVAL / ABANDONMENT OF FUEL DISTRIBUTION SYSTEM PIPELINE AS-BUILT BR9 STATION 0+00 TO 3 +89.63	
MITTED:		DATE APPROVED:	SCALE:
			SHEET FILE No. BR9-1



LTD Soil Sample Analytical Results		
Analyte (unit of measure)	POST031	POST041
Total Petroleum Hydrocarbons (mg/kg)	21	59
BTEX (mg/kg)		
Benzene	<0.006	<0.006
Ethylbenzene	<0.006	<0.006
Toluene	<0.006	<0.006
Xylenes (total)	<0.006	<0.006
Total Carcinogenic PAHs (mg/kg)	<0.17	NA
Immunosassay-PAHs (mg/kg)	RS	<5.6
SPLF (ug/l)		
Diesel Range	<50	NA
Gasoline Range	<50	NA
Benzene	<0.5	NA
Ethylbenzene	<0.5	NA
Toluene	<0.5	NA
Xylenes (m&p-)	<0.5	NA
Xylenes (o-)	1.7	NA

RANGE 13 = Postpiles 101, 112, 113, 115
RANGE 14 = Postpiles 147-150

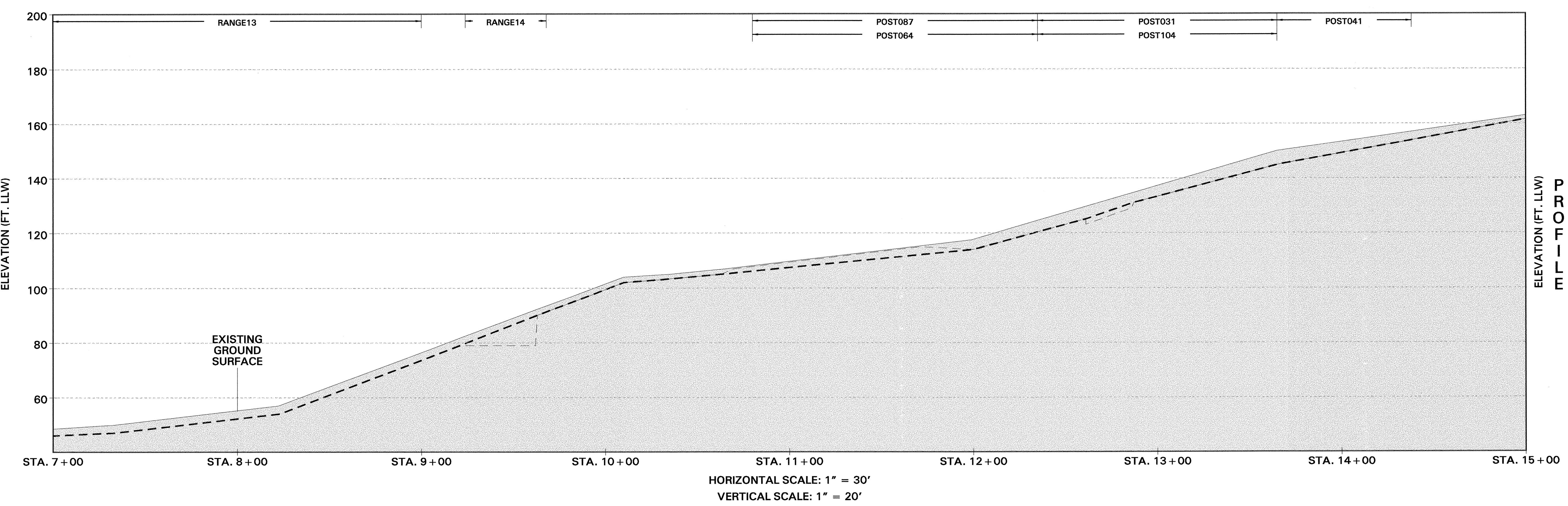


Legend:

E	—	Electric Line
G	—	Gas Line
IRR	—	Irrigation Line
SD	—	Storm Drain Line
SS	—	Sanitary Sewer Line
T	—	Telephone Line
W	—	Water Line
CT	—	Cable TV Line
FO	—	Fiber Optic Line
SL	—	Street Light Line
U	—	Unknown Line
XA	—	Abandoned Utility Line
	Letter Designates Utility Type	A Designates Abandoned
	Pavement	
	Building and Identification No.	
	Excavation	
	Limit of Excavation	
	Removed FDS Pipeline	
	Abandoned In Place FDS Pipeline	
	Previously Removed FDS Pipeline	
	Topographic Contour (Contour Interval: 5ft)	
	Fence	
	Removed Structure (except tanks)	
	Soil Sample	
	Soil Sample Identification No.	
	LTD Soil Sample Identification No.	
	Not Analyzed	
	Not Applicable	
	SAL	Sol Action Level
	Established in SCRs (RWQCB, 1996)	
	Immunosassay Result Superseded by Laboratory PAH Analysis	
	1. Vertical Elevation: Presidio (over Low Water Level)	
	2. All concentrations in mg/kg unless noted otherwise	
	3. The area around removed pipeline was excavated to a width of 2.5-5 ft.	
	4. All soil samples collected from the final limit of excavation	
	5. If no LTD sample identification no., trench backfilled with clean fill	
	6. Excavations back-filled with thermally treated soils (See table below for analytical results)	

Notes:

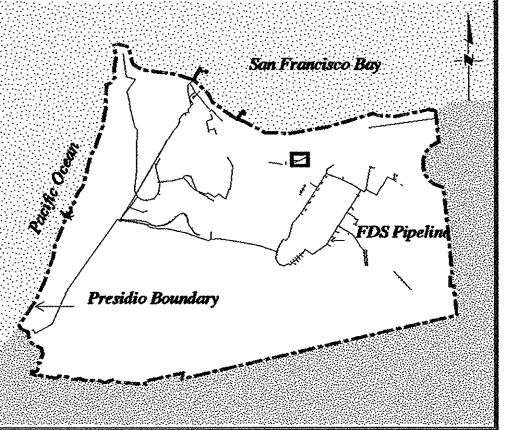
- Vertical Elevation: Presidio (over Low Water Level)
- All concentrations in mg/kg unless noted otherwise
- The area around removed pipeline was excavated to a width of 2.5-5 ft.
- All soil samples collected from the final limit of excavation
- If no LTD sample identification no., trench backfilled with clean fill
- Excavations back-filled with thermally treated soils (See table below for analytical results)



LTD Soil Sample Analytical Results			
Analyte (unit of measure)	POST031	POST041	POST064
Total Petroleum Hydrocarbons (mg/kg)	21	59	22.1
BTEX (mg/kg)			
Benzene	<0.006	<0.006	<0.006
Ethylbenzene	<0.006	<0.006	<0.006
Toluene	<0.006	<0.006	<0.006
Xylenes (total)	<0.006	<0.006	<0.006
Total Carcinogenic PAHs (mg/kg)	<0.17	NA	NA
Immunosassay-PAHs (mg/kg)	RS	<5.6	<5.6
SPLF (ug/l)			
Diesel Range	<50	NA	NA
Gasoline Range	<50	NA	NA
Benzene	<0.5	NA	NA
Ethylbenzene	<0.5	NA	NA
Toluene	<0.5	NA	NA
Xylenes (m&p-)	<0.5	NA	NA
Xylenes (o-)	1.7	NA	NA

RANGE 13 = Postpiles 101, 112, 113, 115
RANGE 14 = Postpiles 147-150

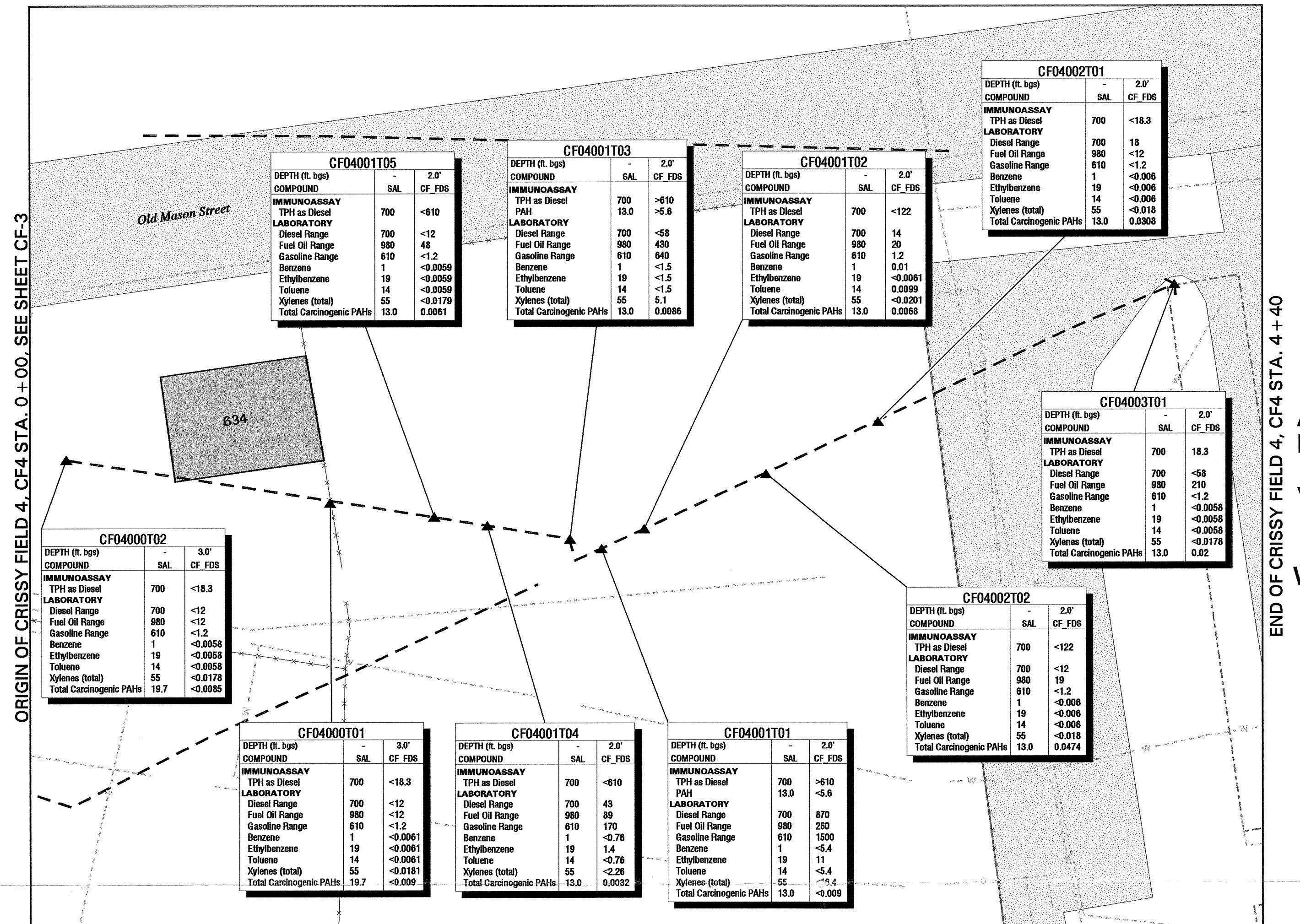
1	04-02-99	TOE PIPELINE REMOVAL SUBMITAL TO DRAKE
REVISION	DATE	DESCRIPTION
MONTGOMERY WATSON DEPARTMENT OF THE ARMY		
SACRAMENTO DISTRICT, CORPS OF ENGINEERS		
PRESIDIO OF SAN FRANCISCO CALIFORNIA		
REMOVAL / ABANDONMENT OF FUEL		
DISTRIBUTION SYSTEM PIPELINE		
AS-BUILT		
STATION 7 + 00 TO 15 + 00		
DESIGNED:	E. MAKHLOUF	
DRAWN:	I. KENNEDY	
CHECKED:		
SUBMITTED:		
DATE APPROVED:		
SHEET	SPC. No.	
MT-2	PIC No.	

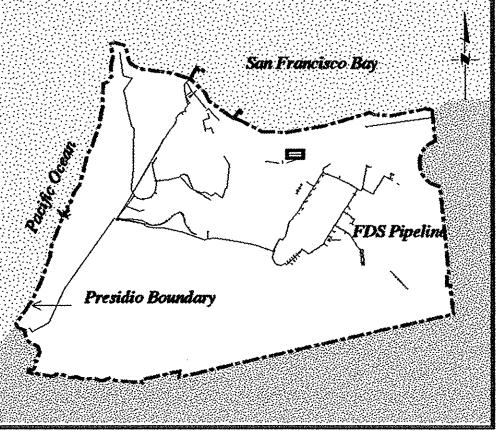


FDS INDEX MAP (DRAWN AT 1' = 60,000')

Legend:

E	Electric Line
G	Gas Line
IRR	Irrigation Line
SD	Storm Drain Line
SS	Sanitary Sewer Line
T	Telephone Line
W	Water Line
CT	Cable TV Line
FO	Fiber Optic Line
SL	Street Light Line
U	Unknown Line
XA	Abandoned Utility Line Letter Designates Utility Type A Designates Abandoned
Pavement	Pavement
Building and Identification No.	Building and Identification No.
Excavation	Excavation
Limit of Excavation	Limit of Excavation
Removed FDS Pipeline	Removed FDS Pipeline
Abandoned In Place FDS Pipeline	Abandoned In Place FDS Pipeline
Previously Removed FDS Pipeline	Previously Removed FDS Pipeline
Topographic Contour (Contour Interval: 5ft.)	Topographic Contour (Contour Interval: 5ft.)
Fence	Fence
Removed Structure (except tanks)	Removed Structure (except tanks)
Soil Sample	Soil Sample
FB0112T02	Soil Sample Identification No.
POST018	LTTD Soil Sample Identification No.
NA	Not Analyzed
NAP	Not Applicable
SAL	Soil Action Level
RS	Established in SCRs (RWQCB, 1996)
IMMUNOASSAY Result Superseded by Laboratory PAH Analysis	IMMUNOASSAY Result Superseded by Laboratory PAH Analysis
Notes:	<p>1. Vertical Datum: Preidio Lower Low Water (LLW)</p> <p>2. All concentrations in mg/kg unless noted otherwise</p> <p>3. The area around removed pipeline was excavated to a width of 2.5-5 ft.</p> <p>4. All soil samples collected from the final limit of excavation</p> <p>5. If no LTTD sample identification no., trench backfilled with clean fill</p> <p>6. Excavations backfilled with thermally treated soils (See table below for analytical results)</p>

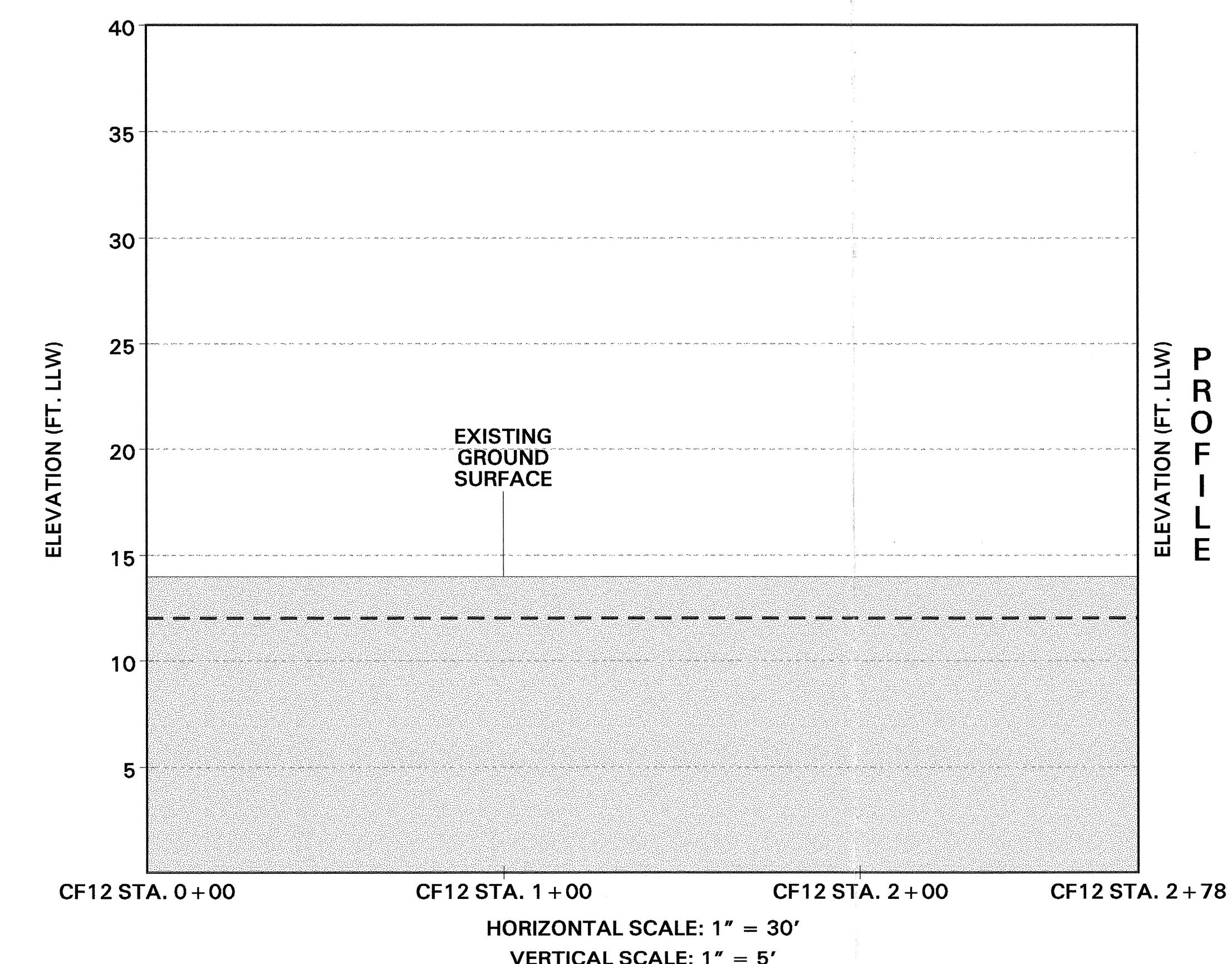
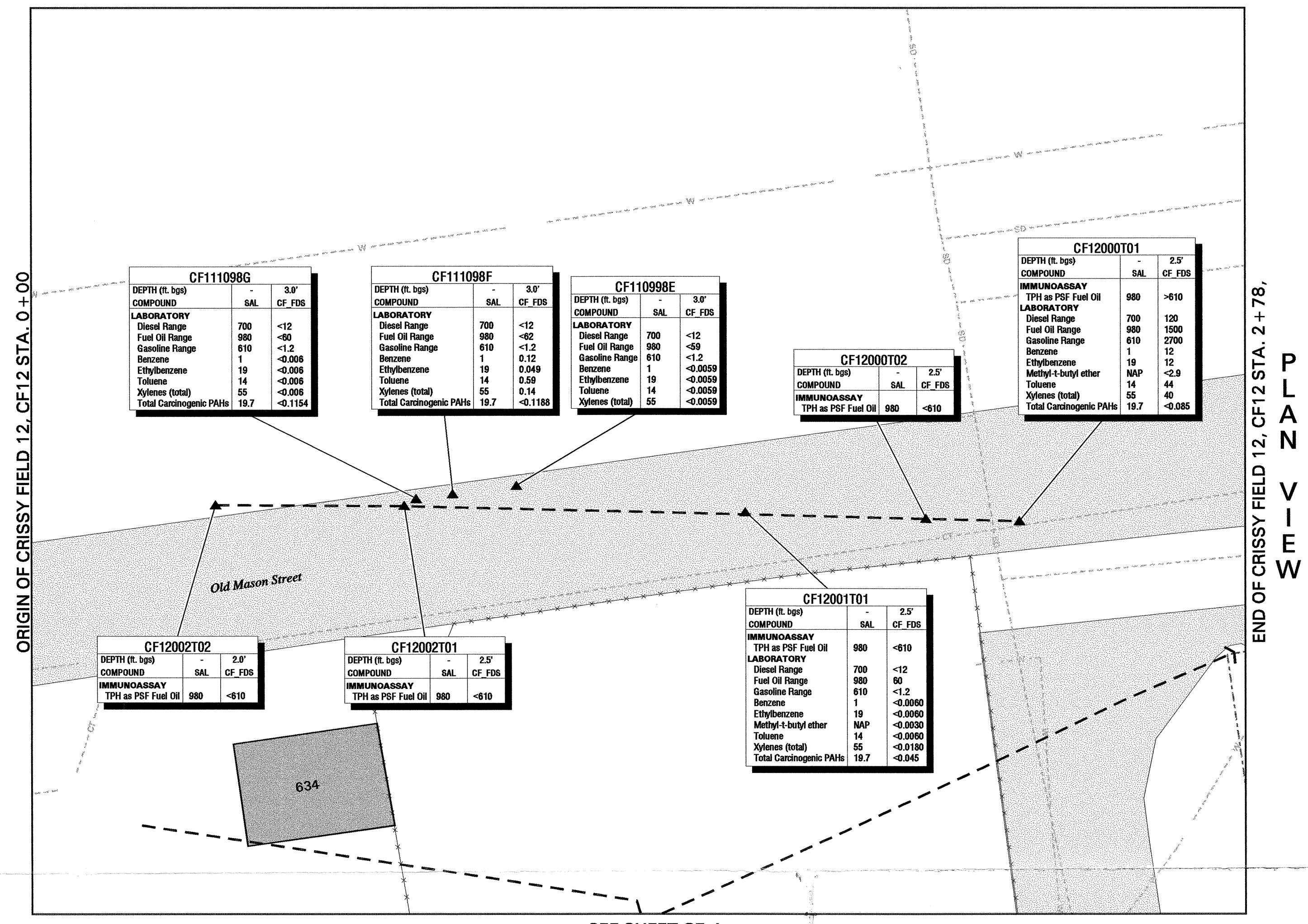




FDS INDEX MAP (DRAWN AT 1' = 60,000')

Legend:

E	Electric Line
G	Gas Line
IRR	Irrigation Line
SD	Storm Drain Line
SS	Sanitary Sewer Line
T	Telephone Line
W	Water Line
CT	Cable TV Line
FO	Fiber Optic Line
SL	Street Light Line
U	Unknown Line
XA	Abandoned Utility Line Letter Designates Utility Type A Designates Abandoned
Pavement	Pavement
Building and Identification No.	Building and Identification No.
Excavation	Excavation
Limit of Excavation	Limit of Excavation
Removed FDS Pipeline	Removed FDS Pipeline
Abandoned In Place FDS Pipeline	Abandoned In Place FDS Pipeline
Previously Removed FDS Pipeline	Previously Removed FDS Pipeline
Topographic Contour (Contour Interval: 5 ft.)	Topographic Contour (Contour Interval: 5 ft.)
Fence	Fence
Removed Structure (except tanks)	Removed Structure (except tanks)
Soil Sample	Soil Sample
FB0112T02	Soil Sample Identification No.
POST018	LTTD Soil Sample Identification No.
NA	Not Analyzed
NAP	Not Applicable
SAL	SAL
RS	RS
Notes:	1. Vertical Datum: Presidio Lower Low Water (LLW) 2. All concentrations in mg/kg unless noted otherwise 3. The area around removed pipeline was excavated to a width of 2.5-5 ft. 4. All soil samples collected from the final limit of excavation 5. If no LTTD sample identification no., trench backfilled with clean fill 6. Excavations backfilled with thermally treated soils (See table below for analytical results)



1	06-11-99	FOR PIPELINE REMOVAL SUBMITAL TO USACE
DESIGNED:	E. MAMHOUF	DEPARTMENT OF THE ARMY SACRAMENTO DISTRICT ENGINEERS SACRAMENTO, CALIFORNIA
DRAWN:	I. KENNEDY	PRESIDIO OF SAN FRANCISCO REMOVAL / ABANDONMENT OF FUEL DISTRIBUTION SYSTEM PIPELINE AS-BUILT
CHECKED:		CF12 STATION 0 +00 TO 2 +78
SUBMITTED:	DATE APPROVED:	SCALE: _____ SPEC. NO. _____ SHEET FILE NO. CF-12

Appendix H

Borehole Logs



SAMPLE LOCATION BR9-1SB01				Project: Fuel Distribution System Field Sampling Plan Project Number: A70004.16							SOIL SAMPLER S. Gillispie		DATE AND TIME SAMPLED 9/26/07 11:00		
SAMPLE LOCATION DESCRIPTION On Long Ave., near Building 988.											WEATHER/TEMP sunny, cool		INITIAL SURFACE COMPLETION 6 inches of asphalt		
DECONTAMINATION METHOD Triple Rinse		BOREHOLE DIAMETER (inches) 2			BACKFILL FOR BOREHOLES Type II/V portland cement				SAMPLING EQUIPMENT Hand Auger		DRILLING METHOD Hand Auger				
Depth Interval	Stratigraphic Name (USCS)	OVM	Overburden?	LTTD?	Native?	Munsell Color Code	Gravel (a) %	Sand (a) %	Silt (a) %	Clay (a) %	Moisture d m m-w w	Odor st mo wk no	ADDITIONAL DESCRIPTION and NOTES (e.g. historical mat'l's, staining, odors, paleosols, plant mat'l, contacts, bedding details, gleying, fractures, clast lithology, weathering / alteration)		
0-3.0	silty sand	0.0			x	10 YR 3/4	10	50	40	-	d	no	fine sand; debris; brick fragments		
3.0-5.0	poorly graded sand with silt	0.0			x	5 YR 5/2	5	80	15	-	m	no	fine sand; greenish-gray		
5.0-6.0	poorly graded sand	0.0			x	10 YR 5/6	5	90	5	-	m	no			

Soil Sample ID	Collection Time	Soil Sampler
BR9-1SB01(5.5)	11:40	Hand Auger

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples were submitted for grain size distribution or other geotechnical analysis.

Notes:



SAMPLE LOCATION BR9-1SB02				Project: Fuel Distribution System Field Sampling Plan Project Number: A70004.16							SOIL SAMPLER S. Gillispie		DATE AND TIME SAMPLED 9/26/07 11:00		
SAMPLE LOCATION DESCRIPTION Long Ave., near Building 988											WEATHER/TEMP sunny, warm		INITIAL SURFACE COMPLETION 6 inches of cement		
DECONTAMINATION METHOD Triple Rinse		BOREHOLE DIAMETER (inches) 2			BACKFILL FOR BOREHOLES Type II/V portland cement				SAMPLING EQUIPMENT Hand Auger		DRILLING METHOD Hand Auger				
Depth Interval	Stratigraphic Name (USCS)	OVM	Overburden?	LTTD?	Native?	Munsell Color Code	Gravel (a) %	Sand (a) %	Silt (a) %	Clay (a) %	Moisture d m m-w w	Odor st mo wk no	ADDITIONAL DESCRIPTION and NOTES (e.g. historical mat'l's, staining, odors, paleosols, plant mat'l, contacts, bedding details, gleying, fractures, clast lithology, weathering / alteration)		
0-2.0	silty sand with gravel	0.0			x	10 YR 3/3	20	50	30	-	d	no			
2.0-5.5	silty sand	0.0			x	5 YR 5/2	5	80	15	-	m	no	greenish-gray; fine sand; organics		

Soil Sample ID	Collection Time	Soil Sampler
BR9-1SB02(5.5)	12:30	Hand Auger

Notes:

Notes:
(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples were submitted for grain size distribution or other geotechnical analysis.



SAMPLE LOCATION BR9-1SB03				Project: Fuel Distribution System Field Sampling Plan Project Number: A70004.16							SOIL SAMPLER S. Gillispie		DATE AND TIME SAMPLED 9/26/07 11:00		
SAMPLE LOCATION DESCRIPTION Long Ave., near Building 988											WEATHER/TEMP sunny, warm		INITIAL SURFACE COMPLETION 6 inches of cement		
DECONTAMINATION METHOD Triple Rinse		BOREHOLE DIAMETER (inches) 2			BACKFILL FOR BOREHOLES Type II/V portland cement				SAMPLING EQUIPMENT Hand Auger		DRILLING METHOD Hand Auger				
Depth Interval	Stratigraphic Name (USCS)	OVM	Overburden?	LTTD?	Native?	Munsell Color Code	Gravel (a) %	Sand (a) %	Silt (a) %	Clay (a) %	Moisture d m m-w w	Odor st mo wk no	ADDITIONAL DESCRIPTION and NOTES (e.g. historical mat'l's, staining, odors, paleosols, plant mat'l, contacts, bedding details, gleying, fractures, clast lithology, weathering / alteration)		
0-2.0	silty sand	0.0			x	10 YR 3/4	5	75	20	-	m	no			
2.0-3.5	silty sand	0.0			x	5 YR 5/2	5	80	15	-	m	no	organics		
3.5-5.0	silty sand	0.0			x	10 YR 3/2	-	80	10	10	m	no	organics		

Soil Sample ID	Collection Time	Soil Sampler
BR9-1SB03(4.5)	13:00	Hand Auger

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples were submitted for grain size distribution or other geotechnical analysis.

Notes:



SAMPLE LOCATION MT-2SB01					Project: Fuel Distribution System Field Sampling Plan Project Number: A70004.16					SOIL SAMPLER Z. Maliga		DATE AND TIME SAMPLED 9/28/07 10:58	
SAMPLE LOCATION DESCRIPTION In lawn next to Building 951.										WEATHER/TEMP foggy		INITIAL SURFACE COMPLETION soil	
DECONTAMINATION METHOD Triple Rinse		BOREHOLE DIAMETER (inches) 2			BACKFILL FOR BOREHOLES Type II/V portland cement				SAMPLING EQUIPMENT Hand Auger		DRILLING METHOD NA		
Depth Interval	Stratigraphic Name	OVM	Overburden?	Native?	Munsell Color Code	Gravel (a)	Sand (a)	Silt (a)	Clay (a)	Moisture	Odor	ADDITIONAL DESCRIPTION and NOTES (e.g. historical mat'l's, staining, odors, paleosols, plant mat'l, contacts, bedding details, gleying, fractures, clast lithology, weathering / alteration)	
						%	%	%	%				
0-2.0	silty sand	0.0	x		10 YR 2/2	10	40	30	20	m	no		
2.0-3.0	clay	0.0		x	10 YR 4/2		10	20	70	m	no	trace gravel	

Soil Sample ID	Collection Time	Soil Sampler
MT-2SB01(2.0)	11:06	Hand Auger

Notes:

Borehole location relocated due to proximity to telephone line.

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples were collected for geotechnical analysis.



Soil Sample ID	Collection Time	Soil Sampler
MT-2SB02(2.0)	9:24	Hand Auger

Notes:

Refusal at 2 1/4 ft bgs.

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples w



SAMPLE LOCATION MT-2SB03					Project: Fuel Distribution System Field Sampling Plan Project Number: A70004.16					SOIL SAMPLER S. Gillispie		DATE AND TIME SAMPLED 10/15/07 13:40	
SAMPLE LOCATION DESCRIPTION Building 952 area										WEATHER/TEMP rain		INITIAL SURFACE COMPLETION 3 inches of asphalt	
DECONTAMINATION METHOD Triple Rinse		BOREHOLE DIAMETER (inches) 2			BACKFILL FOR BOREHOLES Soil Cuttings					SAMPLING EQUIPMENT Hand Auger		DRILLING METHOD Hand Auger	
Depth Interval	Stratigraphic Name	OVM	Overburden?	Native?	Munsell Color Code	Gravel (a)	Sand (a)	Silt (a)	Clay (a)	Moisture	Oder	ADDITIONAL DESCRIPTION and NOTES (e.g. historical mat'l's, staining, odors, paleosols, plant mat'l, contacts, bedding details, gleying, fractures, clast lithology, weathering / alteration)	
						%	%	%	%	d m m-w w	st mo wk no		
0-1.5	sandy silt	NA		x	10 YR 2/2	-	30	50	20	m-w mo-wk		secondary color (5G 5/1)sandy silt with clay; moderate odor decreasing with depth, moist to wet organics.	
1.5-2.5	weathered serpentinite	NA		x	5G 5/1	20	70	10	-	m-w no		bedrock, no odor	

Soil Sample ID	Collection Time	Soil Sampler
MT-2SB03(0.5)	13:55	Hand Auger
MT-2SB03(1.0)	14:00	Hand Auger
MT-2SB03(1.5) (hold)	14:05	Hand Auger
MT-2SB03(2.0) (hold)	14:10	Hand Auger

Notes:

Encountered weathered serpentinite with moderate petroleum odor from 1.0-2.0 ft bgs. Refusal at 2.5 ft bgs.

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples w



Soil Sample ID	Collection Time	Soil Sampler
MT-2SB04(2.0)	9:57	Hand Auger

Notes:

Refusal at 2.5 ft bgs due to bedrock.

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples w



SAMPLE LOCATION MT-2SB05					Project: Fuel Distribution System Field Sampling Plan Project Number: A70004.16					SOIL SAMPLER Z. Maliga		DATE AND TIME SAMPLED 9/27/07 9:30		
SAMPLE LOCATION DESCRIPTION Along Hoffman St.										WEATHER/TEMP foggy/ 70°F		INITIAL SURFACE COMPLETION 10.5 inches of asphalt		
DECONTAMINATION METHOD Triple Rinse		BOREHOLE DIAMETER (inches) 2			BACKFILL FOR BOREHOLES Type II/V portland cement					SAMPLING EQUIPMENT Hand Auger		DRILLING METHOD Hand Auger		
Depth Interval	Stratigraphic Name	OVM	Overburden?	LTTD?	Native?	Munsell Color Code	Gravel (a)	Sand (a)	Silt (a)	Clay (a)	Moisture	Oder	ADDITIONAL DESCRIPTION and NOTES (e.g. historical mat'l's, staining, odors, paleosols, plant mat'l, contacts, bedding details, gleying, fractures, clast lithology, weathering / alteration)	
0-1.5	well graded gravel with silt	0.0	x			5 YR 6/1	60	10	20	10	m	no	6 inches of gravel baserock	
1.0-2.5	weathered serpentinite	0.0			x	5 YR 5/1	-	-	-	-	-	-	bedrock	

Soil Sample ID	Collection Time	Soil Sampler
MT-2SB05(2.0)	9:36	Hand Auger

Notes:

Refusal at 2.5 ft bgs.

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples w



Soil Sample ID	Collection Time	Soil Sampler
MT-2SB06(2.0)	11:37	Hand Auger

Notes:

Refusal at 2 ft bgs.

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples w



Soil Sample ID	Collection Time	Soil Sampler
MT-2SB07(1.0)	15:00	Hand Auger

Notes:

Refusal at 1.5 ft bgs.

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples w



Soil Sample ID	Collection Time	Soil Sampler
MT-2SB08(1.0)	15:10	Hand Auger

Notes:

Refusal at 1.5 ft bgs.

Notes:

(a) Relative percentages were determined in the field, and represent the judgement of EKI field personnel at the time of sampling. They are estimated for determination of Unified Soil Classification System ("USCS") designation only. No samples w